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# INTELLIGENCE BULLETIN



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MILITARY INTELLIGENCE SERVICE  
WAR DEPARTMENT • • • WASHINGTON D.C.

"Inspired by the determination for victory, convinced of our complete superiority over our enemies, especially over the Americans, and full of confidence in our commanders, we shall attack and defeat the enemy everywhere."

—German regimental order of 12 February 1943.

Military Intelligence Service  
WAR DEPARTMENT  
Washington, September 1943

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## TABLE OF CONTENTS

---

### PART ONE: JAPAN

		Page
<b>SECTION</b>	<b>I. LAND MINES, GRENADES, AND BOOBY TRAPS-----</b>	<b>1</b>
1.	General-----	1
2.	Land Mines-----	2
a.	<i>Antivehicle</i> -----	2
b.	<i>Antipersonnel (Dutch)</i> -----	5
c.	<i>Armor-piercing (magnetized)</i> -----	6
3.	Fragmentation Grenades-----	9
a.	<i>Type 91</i> -----	9
b.	<i>Type 97</i> -----	12
c.	<i>Stick Type</i> -----	13
4.	Electric Booby Traps-----	15
5.	Bangalore Torpedo-----	15
<b>II.</b>	<b>NEW JAPANESE WEAPONS FOR INFANTRY SQUAD-----</b>	<b>16</b>
1.	General-----	16
2.	Model 99 Rifle-----	17
3.	Model 99 Light Machine Gun-----	18
a.	<i>General</i> -----	18
b.	<i>Distinguishing Features</i> -----	18
c.	<i>Comment</i> -----	20
<b>III.</b>	<b>TYPE 98 AA/AT GUN-----</b>	<b>21</b>
1.	General-----	21
2.	Table of Characteristics-----	21
3.	Description of Component Parts-----	21
a.	<i>Tube</i> -----	21
b.	<i>Magazine</i> -----	23
c.	<i>Carriage</i> -----	23
d.	<i>Recoil System</i> -----	24
e.	<i>Sights</i> -----	24
4.	Notes on Operation-----	25
a.	<i>Getting into Position</i> -----	25
b.	<i>Firing</i> -----	26
<b>IV.</b>	<b>JAPANESE COMMENT ON U. S. RESISTANCE IN PHILIPPIINES-----</b>	<b>27</b>
1.	Introduction-----	27

## TABLE OF CONTENTS

## PART ONE: JAPAN—Continued

SECTION IV. JAPANESE COMMENT ON U. S. RESISTANCE IN PHILIPPINES—  
Continued.

	Page
2. The Document .....	27
a. Fighting Spirit .....	27
b. Command and Control .....	28
c. Regarding Tanks .....	28
d. Regarding Weapons and Vehicles .....	29
e. Training .....	29
V. COMMENTS ON JAPANESE BY BRITISH SOLDIERS .....	30
1. Introduction .....	30
2. The Comments .....	30
a. Movement .....	30
b. Patrol Tactics .....	31
c. Deception .....	31
d. Use of Artillery .....	31
e. Use of Mortars .....	32
f. Night Attacks .....	33
g. Snipers .....	33
h. Communications .....	33

## PART TWO: GERMANY

## SECTION I. GERMAN RULES FOR USE OF CONTAMINATION BATT

TERIES .....	34
1. Introduction .....	34
2. Terrain Contamination .....	34
II. SOME BASIC PRINCIPLES OF COASTAL DEFENSE .....	37
1. Organization of Strong Points .....	37
2. Organization of Defense Areas .....	38
3. Use of Artillery .....	38
4. Conduct of Battle .....	39
III. BARBED-WIRE OBSTACLES .....	40
1. General .....	40
2. Specific Types .....	42
a. Knife Rests .....	42
b. Apron Fences .....	42
c. Vertical Fences .....	43
d. Concertina Fences .....	43
e. Trip Fences .....	43
f. Alarm Wires .....	43
g. Electrified Wire .....	44
h. Combined Fences .....	44

## TABLE OF CONTENTS

V

## PART TWO: GERMANY—Continued

SECTION III. BARBED-WIRE OBSTACLES—Continued.	Page
3. Standard Technique.....	44
a. <i>Obstacle in Depth</i> .....	45
b. <i>Wire-netting Fences</i> .....	46
c. <i>Trip-wire Obstacles</i> .....	46
IV. TYPES OF CONCRETE ANTITANK OBSTACLES.....	47
1. Walls.....	47
a. <i>General</i> .....	47
b. <i>Continuous Walls</i> .....	48
c. <i>V-shaped Walls</i> .....	48
d. <i>Walls with Gaps</i> .....	48
2. Other Concrete Obstacles.....	49
a. <i>Dragons' Teeth</i> .....	49
b. <i>Plain Blocks</i> .....	50
3. Rails Embedded in Concrete.....	50
V. RECONNAISSANCE METHODS.....	51
1. Introduction.....	51
2. Analysis of German Reconnaissance.....	51
VI. FURTHER INFORMATION ABOUT GERMAN TANKS.....	55
1. Armor Arrangement.....	55
2. Submersible Tanks.....	55
VII. MISCELLANEOUS.....	62
1. Directive for Defense of Positions.....	62
a. <i>Introduction</i> .....	62
b. <i>The Directive</i> .....	62
2. Basic Infantry Tactics.....	64
a. <i>Approach March</i> .....	64
b. <i>Attack</i> .....	64
c. <i>Defense</i> .....	65
3. Tank Ruse to Deceive Artillery.....	66
4. Handling of Prisoners.....	67
5. "This Must Not Occur Again".....	68
6. Railroad Patrol Car (Armored).....	68
7. "We Cannot Lose".....	70
8. Rules for Laying Tellermines.....	71
9. Note on Captured Mines.....	71
10. Device for Stranded Flyers.....	72

## PART THREE: UNITED NATIONS

SECTION I. LIVING IN THE JUNGLE.....	74
1. Introduction.....	74

## TABLE OF CONTENTS

**PART THREE: UNITED NATIONS—Continued**

<b>SECTION I. LIVING IN THE JUNGLE—Continued.</b>	<b>Page</b>
2. Climate	75
3. Insects	77
4. Leeches	79
5. Snakes	80
6. Crocodiles	81
7. Wild Animals	81
8. Poisonous Vegetation	82
9. Natives	83
10. Equipment	84
11. Water	86
12. Food	86
13. Shelter	89
14. Making a Fire	89
15. Pointers on Observation	90
16. Movement	91
17. Maintaining Direction	91
<b>II. BRITISH USE OF TANKS IN JUNGLE WARFARE</b>	<b>93</b>
1. Introduction	93
2. The Memorandum	93
a. <i>The Approach</i>	93
b. <i>Attack</i>	94
c. <i>Defense</i>	95
d. <i>Withdrawal</i>	96

**LIST OF ILLUSTRATIONS**


---

FIGURE 1. Japanese Antivehicle Mine (Type 93)	3
FIGURE 2. Japanese Armor-piercing Mine (magnetized)	7
FIGURE 3. Japanese Hand Grenade (Type 97)	10
FIGURE 4. Japanese Stick Grenade	14
FIGURE 5. Japanese Model 99 Light Machine Gun	19
FIGURE 6. Japanese Model 98 AA/AT Gun (20 mm)	22
FIGURE 7. German Obstacle in Depth	45
FIGURE 8. Wharves and Quays	49
FIGURE 9. German Pz. Kw. 3	56
FIGURE 10. German Pz. Kw. 4	57
FIGURE 11. German Pz. Kw. 6	58
FIGURE 12. German Railroad Patrol Car (armored)	69
FIGURE 13. German Device for Stranded Flyers	72

## PART ONE: JAPAN

### **Section I. LAND MINES, GRENADES, AND BOOBY TRAPS**

---

#### **1. GENERAL**

The Japanese, as compared with the Germans, have used land mines and booby traps on a small scale to date. This is largely due to the fact that the Japanese were on the offensive until our invasion of Guadalcanal—and even there the enemy held most of the island for several months afterwards and, almost to the end, maintained high hopes of annihilating us. As a rule, no enemy will lay mines and booby traps on a big scale if he expects to move over the area himself sometime in the immediate future. When the Japanese are forced to assume the defensive on a large scale, with little hope of advancing, they are expected to use mines and booby traps extensively. The use of such weapons would certainly be expected of an enemy who has been highly deceptive and treacherous in many other respects.

If our soldiers are alert and have a general idea of the appearance and function of mines and booby traps, they should not entertain any great fear of these weapons. As one Guadalcanal observer pointed out, we should never assume that an area recently occupied

by the enemy, or equipment therein, is safe until it is thoroughly checked. A death caused by an enemy booby trap is considered a needless and useless sacrifice. Enlarging his remarks about the Japanese, the observer said:

Whenever the enemy abandons an area which has been held against siege, or which has been in his possession for any length of time, he will usually attempt to lay traps for the forces occupying the area. These traps usually consist of simple improvised devices, such as antipersonnel mines placed under loose boards likely to be walked on, antivehicle or tank mines placed in the tracks of a narrow road, or devices fastened to doors or laid across narrow paths.

The purpose of such traps is twofold: (1) to cause front-line casualties, and (2) to slow the advance of the attacking forces.

At the present time, the Japanese are known to have three types of land mines and two types of grenades which can be used in such traps as those described above.

## **2. LAND MINES**

### **a. Antivehicle**

The Japanese antivehicle mine, officially known as Type 93, is commonly called "the tape-measure mine" because it resembles an ordinary rolled-up tape measure see fig. 1). The weapon weighs 3 pounds, and has a diameter of  $6\frac{3}{4}$  inches and a thickness of  $1\frac{3}{4}$  inches. It is filled with 2 pounds of a picric acid compound. The mine container, which consists of two light-metal sections, is painted either yellow

or olive drab. In the center of the top is a brass dome or plug, which screws into the mine and covers the fuze. The plug, 1 $\frac{1}{2}$  inches in diameter, has a  $\frac{3}{8}$ -inch red band painted around it. On opposite sides of the circular weapon are two rings, spaced 2 inches apart, which often have small loops of rope secured to them. The rope can be used in carrying the mine, in hanging it up when it is not in use, or in dragging it across the path of a tank.

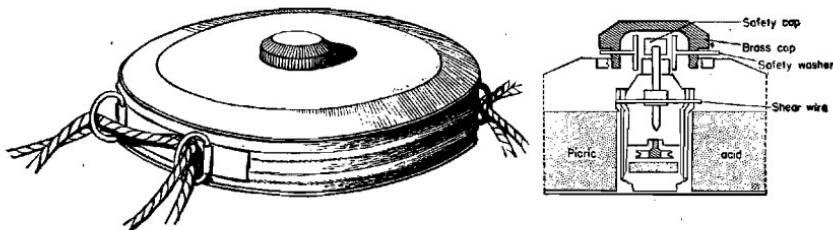


Figure 1.—Japanese Antivehicle Mine (Type 93)

The mine is exploded by pressure applied on the brass plug. Normally more than 200 pounds of pressure is required to activate the weapon, but no chances should be taken. Actually, a shear wire—which holds the firing pin in a cocked position—determines the pressure necessary to explode the mine. The wire may vary in strength according to the tactical use of the weapon. Some reports indicate the use of shear wires which require a pressure of only 70 pounds to break. Pressure applied to the brass plug first crushes the top cover; the brass plug then contacts the top of the firing pin, thereby putting stress on the shear wire and causing it to break. When it breaks, the mine explodes.

The safety cap, which is small, screws onto the upper end of the firing pin. When in position, this cap prevents depression of the firing pin and explosion of the mine. An additional safety device in the form of a brass collar is attached to a safety washer. This collar and washer fit around the firing pin and safety cap.

Usually these mines are laid in patterns of diagonal rows, with the mines about 30 inches apart. The plug of each mine usually is at ground level. If the presence of a minefield is suspected, the ground should be probed with bayonets. Test the ground every 5 inches keeping the bayonet as nearly horizontal as possible. Soon the pattern in which the mines are laid will become apparent, and your work will be greatly speeded.

To neutralize the Type 93 mine, first examine the area around the weapon for booby traps. Then, without moving the mine or exerting any pressure on the cover, unscrew and remove the brass plug. Without any downward pressure, screw the safety cap tightly into the top of the plunger. Place the safety collar and washer over the safety cap, and screw on the brass plug.

To disarm the mine, unscrew the brass plug without exerting any downward pressure. Then unscrew and remove the whole igniter assembly from the base of the mine.

The mines should be placed clear of the road or area. Do not throw them down or pile one upon the

other; under no circumstances should you strike the plug or allow it to receive any pressure. After a careful inspection for booby-trapping devices, the mines can safely be picked up by the rings.

### b. Antipersonnel (Dutch)

The Japanese captured a quantity of Dutch antipersonnel mines in Java, and may have used a number of them on Guadalcanal.

The Dutch mine, painted an olive drab, is  $8\frac{1}{2}$  inches in diameter and  $3\frac{1}{2}$  inches thick. It has a dome-shaped cover, which is held off the striker by a light spring. The cover is fastened to the mine by four screws.

Fifty pounds of pressure on the cover of this mine, from any direction, will detonate it. The mines are usually laid in narrow places, on trails, on beaches, or at the entrance to a bivouac area.

They can easily be hidden under a palm frond (leaf) or a light plank. Normally the Japanese place them on top of the ground, but you can expect to find them partly or wholly buried under loose sand or earth. Small patches of disturbed ground may conceal these mines. It would be suicidal to use more than light pressure in probing for them.

To remove these mines, carefully scrape away the loose dirt and pick up the individual mine by the cover—never by the bottom. Lay it gently on the ground, and, with your knife, remove the four screws which fasten the cover. Remove the cover and then

unscrew the igniter. After laying the safe mine to one side, mark it "Safe" before proceeding, so that others will not waste time repeating your work.

### c. Armor-piercing (magnetized)

The Japanese armor-piercing mine (magnetized) contains eight separate sections of cast TNT, which are wrapped in wax paper and held together in a khaki-colored canvas bag (see fig. 2). It is circular in shape, with two flat surfaces. Four equally spaced permanent magnets are attached by khaki webbing to the outer edge of the body. The mine is carried in a stiff canvas pouch which attaches to the soldier's belt. Fitted to the inside of the pouch is a cylindrical metal container for holding the igniter, which must be inserted into the mine prior to using. A wooden plug is carried in the igniter cavity of the mine when the latter is carried in the pouch. The plug is removed to permit fitting of the igniter, which is secured to the mine container by an igniter-retaining nipple and held by a threaded brass collar. The complete mine with igniter weighs 2 pounds 11 ounces.

The mine is detonated by a sensitive delayed-action, percussion-type igniter, which is shown in figure 2. The protruding end of the igniter consists of a firing pin, which is attached to the igniter body by a set screw through the firing-pin set-screw slot. The firing-pin assembly is spring-loaded by the firing-pin spring, and is held in the loaded position by four steel balls, which fit into the circular groove in the firing-pin assembly and the holes provided in the igniter body. A

firing-pin spring locking plug limits the spring at the upper end of the igniter body. The steel balls are held in place by the firing pin, which has a continually increasing internal diameter from the open end; and

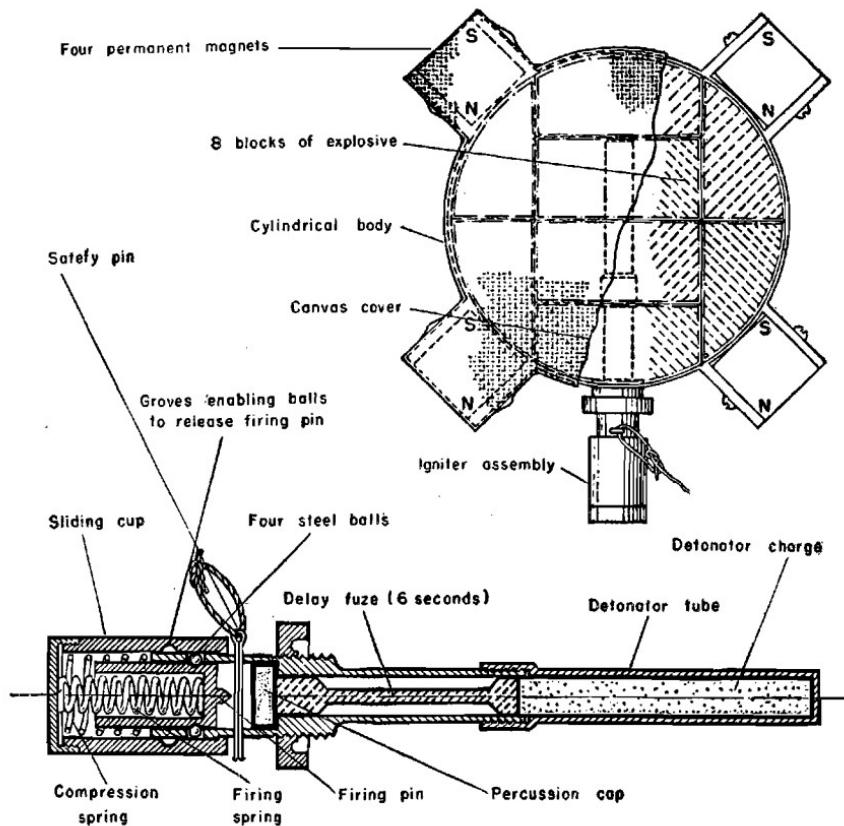


Figure 2.—Japanese Armor-piercing Mine (magnetized)

as the firing pin is depressed against the firing-pin spring, the steel balls are forced from their position by pressure of the firing-pin spring on the firing-pin assembly, thus allowing the firing pin to go forward.

The firing pin is prevented from being depressed by a safety pin positioned in the safety-pin hole in the igniter body. A length of cord is attached to the firing pin for withdrawing purposes. The primer and delay element screws into the igniter body. The detonator element screws onto the delay element. The primer is of the percussion type, and the delay element is of the pressed black-powder type, with a burning time of approximately 10 to 12 seconds. The igniter body is provided with a fusible plug to allow escape of the gases from the delay element.

This type of mine is intended for direct use against armored vehicles, shields on gun mounts, doors of pill-boxes, and so forth. The mine is placed in contact with the iron or steel object and adheres to it by action of the magnets. The safety pin is withdrawn, and the firing pin is depressed, actuating the igniter and exploding the mine in approximately 4 to 5 seconds. During this time the attacker must make his escape.

While it is reported that the mine may be thrown by hand, it is considered, from the shape and design of the mine and igniter, that it is not suitable for this purpose and must be placed by hand in direct contact with any metallic part of the objective. Provided that a suitable type of igniter is used, the mine may be set up as a booby trap if placed under a loose board or arranged in other ways, as suggested for the hand grenades. The igniter designed for this mine is not particularly suitable for booby trapping. Other types of igniters could be used with this mine for booby-trapping purposes.

### 3. FRAGMENTATION GRENADES

The Japanese are known to have at least four types of fragmentation grenades, but all are constructed along the same general lines. They differ slightly in dimensions, and two of them have added attachments. It would be possible to use any of these grenades in devising booby traps.

#### a. Type 91

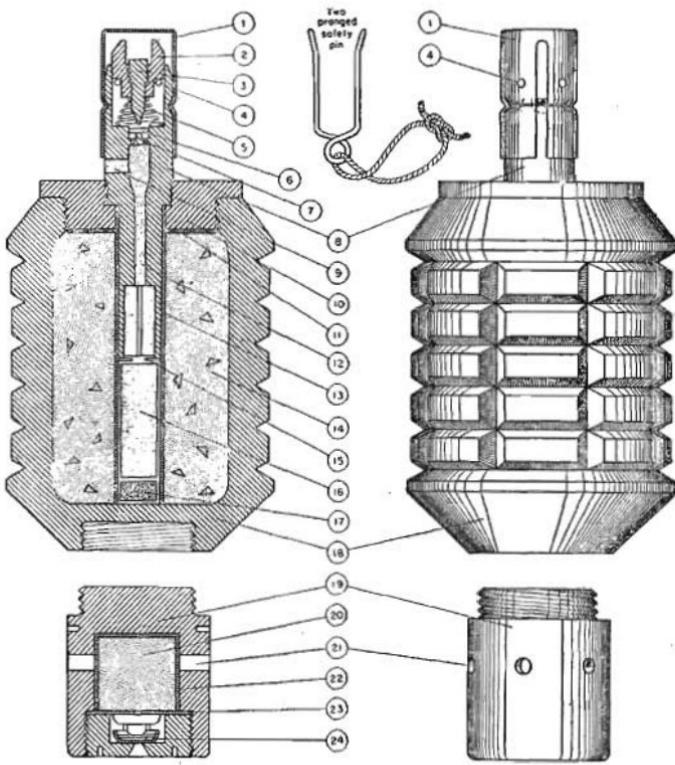
This is a hand grenade, and is believed to be a revised version of the "10-year type" grenade. The latter type, which is not being widely used, will not be discussed here since it is very similar to Type 91, the most common of all types, and the one most likely to be used in devising booby traps.

The Type 91 grenade has a cylindrical body. Its outer surface has both horizontal and vertical grooves, which form rectangular notches (see fig. 3). These grooves are designed to cause the grenade to break into small pieces at the time of detonation. Actually, however, the grenade does not fragment as much as intended. In some cases, according to observers, the weapon has been known to break into only two pieces. U. S. observers on Attu reported that it was not as effective as our fragmentation grenade.

The fuze, made of brass, screws into the top of the grenade, the base of which is solid. The fuze has a cap on the upper end. This cap holds a spring-loaded striker in the body of the fuze. Holes are drilled through both the cap and fuze—near their ends—for the insertion of a safety pin.

## JAPANESE HAND GRENADE

## WITH PROPELLANT ATTACHMENT



## LEGEND

- |   |                                    |
|---|------------------------------------|
| 1. Firing pin safety cover  | 10. Plug screwed into grenade body |
| 2. Firing pin holder, has two shoulders under which the two prongs of safety pin fit. | 11. Cardboard washer               |
| 3. Firing pin   | 12. Delay fuze, (4 to 5 seconds).  |
| 4. Holes for insertion of safety pin.   | 13. Igniter assembly tube          |
| 5. Creep spring   | 14. Bursting charge                |
| 6. Percussion cap   | 15. Perforated steel disk          |
| 7. Two flesh holes  | 16. Igniter charge                 |
| 8. Body of Igniter  | 17. Felt packing                   |
| 9. Air vent, filled with wax and sealed with tinfoil.                                 | 18. Grenade body                   |

NOTE. This drawing is of the "Type 97", showing propellant attachment, for use with a grenade discharger.  
"Type 91" is not made with this attachment, but is otherwise exactly the same as above drawing.

Figure 4.—Japanese Hand Grenade (type 97).

## **CORRECTION**

**Figure 4 on page 10 should read Figure 3**

The over-all length of the Type 91 grenade is 4 inches, and the maximum diameter of its body is about 2 inches. The body length is  $2\frac{3}{4}$  inches, and the fuse length is  $2\frac{5}{8}$  inches.

To fire this grenade, pull out the safety pin and strike the fuze on a hard object, such as a shoe heel, rock, or steel helmet. This action fires the cap and starts a delaying action of 4 to 5 seconds before detonation. Some of the fuzes have proved unreliable—they caused detonation earlier, or later, than usual. As a safety precaution, the grenade should be thrown immediately after striking the fuze on a hard object.

The simplest way to render the grenade safe is to replace the safety pin. If the safety pin is not around, insert a piece of wire, instead. Alternatively, either unscrew the fuse, or fire the grenade and throw it away to explode harmlessly. Do not allow the grenade to explode if this will give away your position to the enemy.

If it is necessary to disassemble the grenade, take the following steps:

- (1) Leave the safety pin in place. Unscrew the fuze (right-hand threads) from the top of the grenade.
- (2) Place a small screwdriver through the hole in the center of the top of the striker's retaining cap, and unscrew the striker as far as possible.

- (3) Remove the safety pin—it should come out easily. Remove the striker retaining cap; this action will leave the striker and striker spring free to be removed.

Assembly may be accomplished by reversing the above procedure.

This grenade can be used as a booby trap by placing it in the ground with its fuze up and pulling out the safety pin, so that it may be detonated by the weight of a man stepping on it. You must expect to find this grenade under planks, chair seats, or under anything else upon which you may walk or sit.

### b. Type 97

This grenade, which has a propelling charge attached to its base, is designed primarily for use in the Japanese grenade dischargers (see *Intelligence Bulletin*, Vol. I, No. 9, pages 15-23, for details of the grenade dischargers and the types of ammunition used in them).

With the exception of the attached propelling charge, the Type 97 grenade is practically identical with the Type 91 (see fig. 3), and it may be fired as a hand grenade.

Practically all parts appear to be interchangeable. The propelling charge of the Type 97 is inserted or screwed into a hole in the base of the grenade. This hole is smooth in some of the grenades and threaded in others.

The steps in disassembling Type 97 are the same as for Type 91, plus the following:

(1) Unscrew the propelling-charge assembly from the base of the grenade.

(2) Unscrew the threaded bottom of the propelling-charge housing and remove the propelling charge.

### c. Stick type

Few reports have been received from combat areas on this type of grenade—sometimes called the “potato-masher” type—and it is believed that the Japanese have used them very little so far in this war.

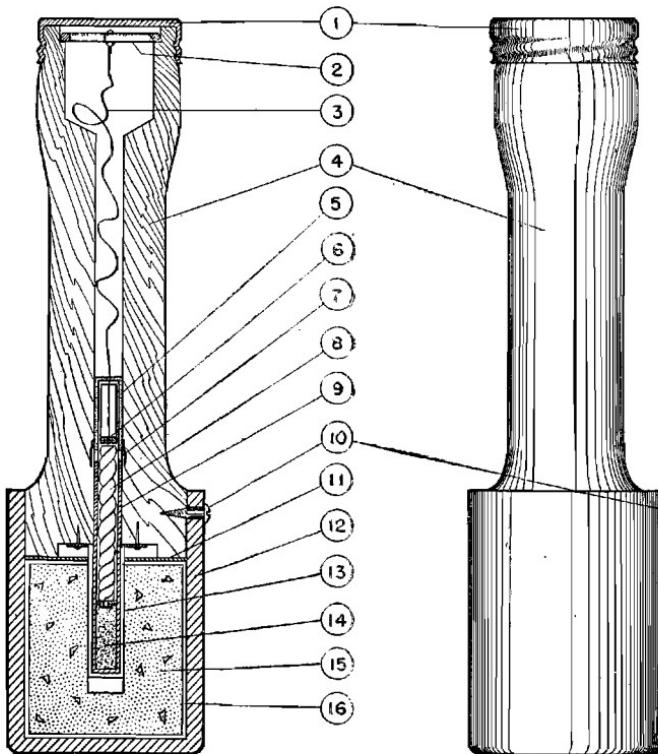
The stick grenade, except for an attached wooden handle used as an aid in throwing, is similar in size to the Type 91 hand grenade (see fig. 4). The over-all length of the stick type is 7.87 inches. The handle itself is about 5 inches long, and the diameter of the body, made of steel, is 1.97 inches. It does not have the rectangular notches.

The wooden handle, which has a small hole extending lengthwise through its center, is inserted and fastened at the top of the grenade. Fitted over the end of the handle is a tin screw cap, and under this cap is a ring tied to a piece of string. This string extends from the ring through the hole in the handle and is tied to a friction igniter in the fuze.

To throw the grenade, the thrower removes the tin cover from the handle, hooks the ring with his middle finger, and slings the grenade (the handle is not detached). When the friction igniter is pulled out by the string, the igniter activates a delay train. The latter burns for 4 to 5 seconds before it reaches the detonator, which, in turn, fires the bursting charge. The fragmentation of this grenade is believed to be poor.

A trip-wire booby trap can easily be made from this grenade. It is necessary only to attach a wire from the friction-igniter string to some movable object,

### JAPANESE STICK GRENADE



#### LEGEND

- |                                |                                     |
|--------------------------------|-------------------------------------|
| 1. Pressed metal-cap.          | 9. Fuze-igniter tube                |
| 2. Ring                        | 10. Screws securing handle to body. |
| 3. Pull cord                   | 11. Waxed paper washers.            |
| 4. Wooden handle.              | 12. Grenade body.                   |
| 5. Abrasive material           | 13. Waxed paper cylinder.           |
| 6. Striker.                    | 14. Detonator:                      |
| 7. Vents, sealed with tinfoil. | 15. Bursting charge.                |
| 8. Delay fuze.                 | 16. Waxed paper cover.              |

**Figure 4.—Japanese Stick Grenade.**

such as a door, vine, or trip wire across a path or trail, or to a souvenir. To neutralize the booby trap, simply cut the wire, replace the ring in the handle, and screw on the cap.

#### 4. ELECTRIC BOOBY TRAPS

Watch out for electrically detonated booby traps. Any vehicle, searchlight, generator, light circuit, or other electrical gear can be rigged easily so that the current will detonate an explosive charge. Before any captured equipment is handled, it should be examined for electrical as well as mechanical booby traps.

#### 5. BANGALORE TORPEDO<sup>1</sup>

The Japanese Bangalore torpedo is not likely to be used in booby traps, but our soldiers should be familiar with its appearance and operation. The weapon consists of an explosive charge placed in a piece of common iron pipe, 2 inches in diameter and 40 inches long, with a cap on each end. It can be further identified by a red ring painted around the pipe.

To fire this type of Bangalore torpedo, a lanyard is attached to a braided cord which hangs out one end of the pipe; by jerking the lanyard, a friction igniter starts a delay train, which, in turn, sets off the explosive charge. There is a delay of 6 to 7 seconds, enabling personnel to take cover.

This weapon is used to cut barbed-wire entanglements—the fragments of the pipe sever the wire.

---

<sup>1</sup> Another type of Japanese Bangalore torpedo, with a bamboo body, is described in *Intelligence Bulletin*, Vol. I, No. 10, page 83.

## **Section II. NEW JAPANESE WEAPONS FOR INFANTRY SQUAD**

---

### **1. GENERAL**

For the purpose of increasing fire power, the Japanese Army for some time has been replacing the 6.5-mm (.256-cal.) weapons of its infantry squad with 7.7-mm (.303-cal.) weapons. These include the Model 99 (1939) 7.7-mm rifle and the Model 99 (1939) 7.7-mm light machine gun. They have been designed to take the place of the Model 38 (1905) 6.5-mm rifle, the Model 11 (1922) 6.5 mm light machine gun, and the Model 96 (1936) 6.5-mm light machine gun.

Details of all these weapons except the Model 99 light machine gun have been given in previous issues of the *Intelligence Bulletin* or in other Military Intelligence Service publications. An Ordnance study of the Model 99 rifle was published in *Intelligence Bulletin*, Vol. I, No. 7. The Model 96 machine gun is described in TM 30-480 (as revised Sept. 21, 1942), while the Model 38 rifle is described in TM 30-480 and also in *Intelligence Bulletin*, Vol. I, No. 5.

The Model 99 rifle and light machine gun both fire Model 99 rimless<sup>1</sup> 7.7-mm ammunition, which also is

<sup>1</sup> In *Intelligence Bulletin*, Vol. I, No. 7, p. 5, par. 2, line 4, change "semi-rimless" to "rimless."

adapted for firing in the Model 92 (1932) 7.7-mm heavy machine gun. This latter weapon originally was made to fire only 7.7-mm Model 92 semi-rimless ammunition. The Model 99 weapons will not, in turn, fire the semi-rimless ammunition, or any caliber .30 U. S. ammunition, or any caliber .303 British ammunition. Although originally designed to fire the semi-rimless ammunition, the Model 92 heavy machine gun has a somewhat higher cyclic rate of fire with the Model 99 rimless ammunition.

A muzzle velocity between 2,250 and 2,300 feet per second was obtained in firing the rimless Model 99 ammunition in the Model 99 rifle, the Model 99 light machine gun, and the Model 92 heavy machine gun.

On Attu whole units were found armed with the Model 99 rifle and light machine gun. On Guadalcanal a small number of the new rifles and new light machine guns were observed.

## 2. MODEL 99 RIFLE

The following notes on the Model 99 rifle supplement the information about this weapon published in *Intelligence Bulletin*, Vol. I, No. 7:

The Model 99 rifle is known to the Japanese soldier as *Kyu Kyu Tan Shojū* (99 short rifle). It is marked *Kyu Kyu Shiki* (Model 99) on top of the receiver, just below the Imperial Seal. It is capable of delivering deadlier and possibly more accurate fire than Model 38. However, the new rifle has a pronounced muzzle flash, which is not the case with Model 38. Model 99 also has a normal amount of recoil, which may affect the

marksmanship of the Japanese soldier, who is accustomed to the very slight recoil of Model 38. Because of this difference in recoil, some prisoners of war have stated that they prefer the old rifle.

The new weapon may be distinguished from the old by the following features:

- a. It is 5 inches shorter.
- b. A monopod mount, which is attached to the lower band and which can be folded forward to catch on the stock when not in use.
- c. A rubberized sling attached to swivels on the left side of the rifle instead of to the bottom.
- d. The slide of the rear sight has an arm extending to the left and one to the right for use when firing at aircraft. The arms, which, when opened, extend  $2\frac{3}{8}$  inches from the center of the rifle, are folded upward against the sight during ground firing.

### **3. MODEL 99 LIGHT MACHINE GUN**

#### **a. General**

The Model 99 light machine gun is a 7.7-mm version of the Model 96 light machine gun. The two weapons are very similar in general appearance, and the greatest care must be taken to distinguish them from each other. Many parts are common to both guns.

Model 99 (see fig. 5) is known to the Japanese soldier as *Kyu Kyu Keiki*, and is marked "*Kyu Kyu Shiki*" on top of the receiver.

#### **b. Distinguishing Features**

Model 99 may be distinguished from Model 96 by the following features:

- (1) A heavy, adjustable monopod, which is attached to an extension at the bottom of the butt plate.

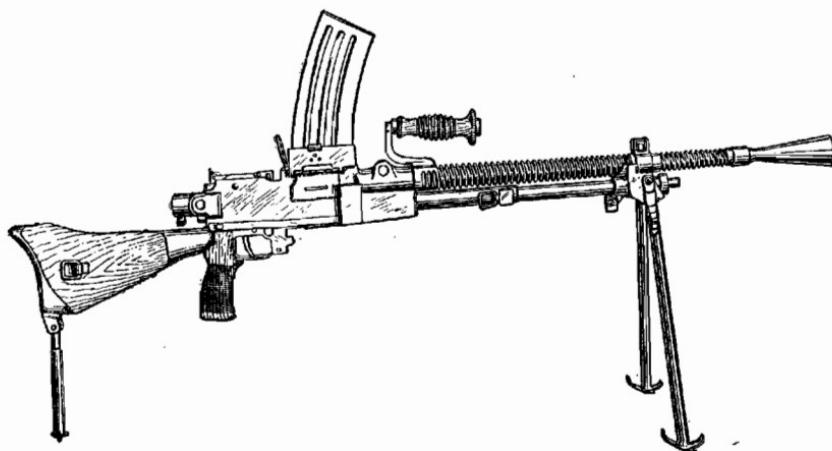


Figure 5a.—Japanese Model 99 Light Machine Gun (showing distinguishing rear monopod).

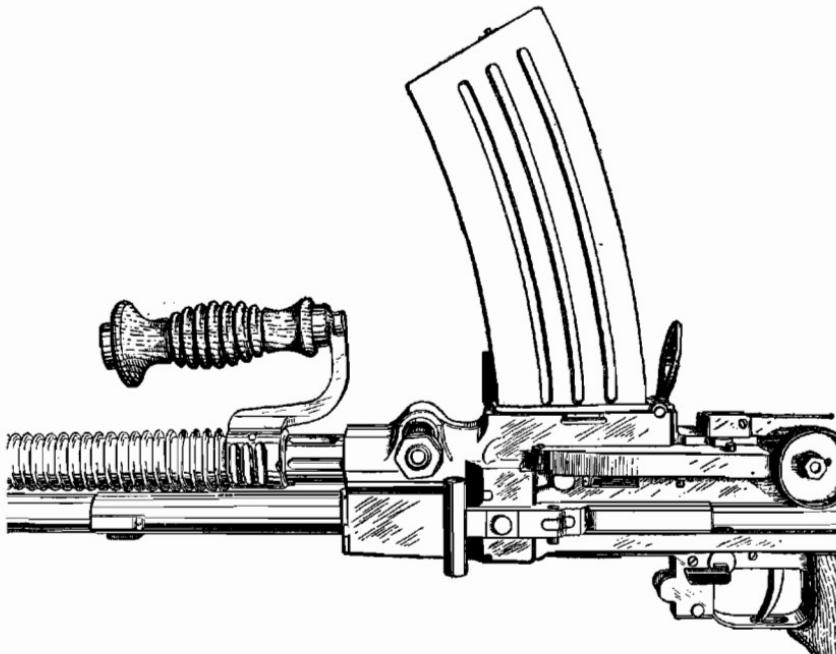


Figure 5b.—Japanese Model 99 Light Machine Gun (showing barrel partly withdrawn).

(2) A trigger safety which is located on the left-hand side of the trigger guard instead of on the right-hand side, as on Model 96.

(3) The method of locking the barrel to the receiver. On Model 99, the barrel locking bolt, which holds the barrel in the receiver, is held on by a heavy six-sided nut marked from 1 to 8. On Model 96 the barrel is retained in the receiver by a locking swivel, which has an outside handle lying parallel to the barrel.

(4) The flash hider of Model 99 screws onto the end of the barrel, which is threaded to receive it. The flash hider of Model 96 locks onto the barrel with a bayonet-type lock.

(5) The barrel of Model 99 is somewhat heavier than that of Model 96, but both are of the same length.

(6) The magazine of Model 99 is about 1 inch longer and somewhat less curved than that of Model 96.

#### c. Comment

Model 99 is considered a more effective weapon than Model 96, particularly because of the support given by the adjustable monopod at the rear and its heavier ammunition. It is believed that the effective range of Model 99 is possibly 200 yards greater than that of Model 96. The former has a high cyclic rate of fire, about 700 to 800 rounds per minute, in contrast to an estimated cyclic rate of 550 rounds per minute for the Model 96.

## **Section III. TYPE 98 AA/AT GUN**

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### **1. GENERAL**

The Japanese Type 98 antiaircraft-antitank gun, 20-mm, is considered one of the enemy's best constructed and most efficient weapons. Most of its features were copied from a 20-mm rapid-fire gun manufactured by the Oerlikon Company, of Switzerland. In fact, some of the bearings in the carriage of a Type 98 recently examined by U. S. Ordnance experts bore a Swiss stamp. The Japanese weapon, weighing approximately 840 pounds, is relatively light and very maneuverable.

### **2. TABLE OF CHARACTERISTICS**

Weight	840 lbs
Elevation	-9° to +81.9°
Traverse (pintle type)	360°
Maximum horizontal range	5,450 yds
Maximum vertical range	12,000 ft
Rate of fire	120 rds per min
Muzzle velocity	2,720 fs
Length of barrel	70 calibers

### **3. DESCRIPTION OF COMPONENT PARTS**

#### **a. Tube**

A stamp on the tube of the weapon examined indicated it was made in December 1940.

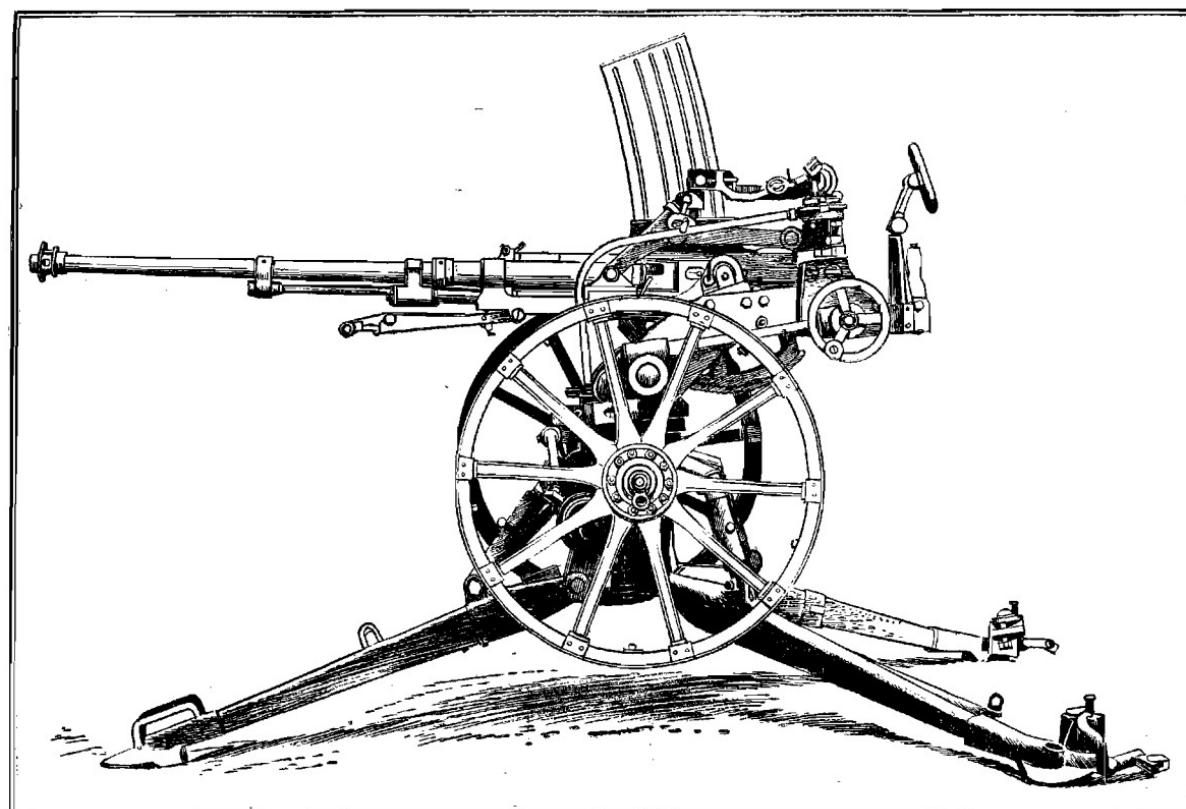


Figure 6.—Japanese Model 98 AA/AT Gun (20 mm).

The length of the tube is  $57\frac{1}{6}$  inches with the muzzle brake, and  $55\frac{1}{8}$  inches without it.

The locking of the tube to the receiver is accomplished by means of an interrupted thread bushing, which screws one-sixth of a turn into the receiver; this bushing is locked into position by a latch liner which fits into adjusting notches.

The muzzle brake is a large, flat ring, which extends out about 1 inch from the muzzle. The tube extension has holes (see fig. 6) to allow room for gases to expand. These gases leave the muzzle under very high pressure, and exert a force against the flat ring. This aids the recoil action, disperses the muzzle blast, and breaks up the flash.

#### **b. Magazine**

The magazine is of the vertical box type, and has a capacity of 20 rounds. It fits into a slot in the top of the receiver, and is held in place by a shoulder and spring catch.

#### **c. Carriage**

The carriage weighs 685 pounds, and, in its traveling position, has an over-all length of 9 feet. Its body has a road-clearance of 1 foot. The trails are the split type, and a detachable third leg (outrigger) is provided. The trails have fixed spades, with holes so that stakes can be used in stabilizing the gun.

The carriage has no shield. Its wheels are made of wood with iron or steel tires. The wheels, equipped with lug rings, can be detached easily.

**d. Recoil System**

This consists of two spring-loaded cylinders, which have valves in their forward ends. These valves allow air to be drawn in during recoil, and, since the air cannot escape readily, it acts as a cushion in easing the counterrecoil. The length of the recoil is estimated to be 2 to 2½ inches. It can be adjusted to a certain extent, but, once set, it becomes constant.

**e. Sights**

To date, no sights for this gun have been recovered. However, a report on the sight mount states that it has a small V-type open sight, with the head varying from about 2 to 8 inches from the notch. The mount has a mounting bracket for a sight of some type, and it is obvious from the accuracy obtained by the gun in combat that it is equipped with some type of modern telescopic sight. The small V-type open sight is probably used for initial aligning, or for short-range firing. It would be very ineffective as an open sight against aircraft.

The sight mount is rigidly fastened to the top of the carriage and to the sleigh by means of dovetailed, spring-locked mounting plates. The mount provides for setting in corrections, leads, deflections, and so forth, but how these devices operate cannot be thoroughly understood unless the actual sights are studied.

## 4. NOTES ON OPERATION

### a. Getting into Position

It is estimated that an experienced gun crew could change the piece from a traveling position to a position for antiaircraft firing within a period of 3 minutes.

If necessary, this gun could be fired from its wheels as a split-trail artillery piece. In this case it could be placed in firing position from its traveling position within a few seconds. Under such conditions, the fire probably would not be very accurate. The weapon apparently is not designed for firing from the wheels, because it could not be cross-leveled, has no equalizer, and would be quite unstable.

The gun is placed into regular firing position from the traveling position by the following steps:

- (1) The outrigger is attached to the front of the housing. This can be done rapidly because of the spring-loaded locking features.
- (2) The axle is rotated to the rear, raising the wheels off the ground.
- (3) The wheels are removed by releasing-spring catches on the axles. Removal of the wheels permits a 360-degree traverse at all elevations.
- (4) The gun is cross-leveled by means of jacks on the outrigger and trails. The cross-levels are located on the upper carriage housing. The level vials are set in metal cylinders, which rotate one-half a turn and protect the vials when they are not in use.

**b. Firing**

In loading, the breech block strips individual cartridges from the magazine as the block moves forward and carries the shell into the firing chamber. As the shell is sealed into the chamber, its base is forced onto the extractor. (The extractor, spring-operated, is located at the bottom of the face of the breech block, and fits into a groove in the rear of the chamber.)

The gun may be fired either automatically or by single shots, depending on the position of a change lever, which is located at the bottom of the rear of the sleigh.

When the ammunition magazine is emptied, the bolt is held open by means of a spring-operated lever.

The gun has two safety features. The spring-charged lock on the firing handle must be pressed before the handle can be moved forward in preparation for firing. Also, the piece can be rendered "safe" merely by rotating the firing handle in a clockwise direction.

## **Section IV. JAPANESE COMMENT ON U.S. RESISTANCE IN PHILIPPINES**

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### **1. INTRODUCTION**

An official Japanese Army document, recently acquired and translated, describes in some detail the fierce resistance put up by American and Filipino forces in defending the Philippine Islands. The document, dated "March 1943," apparently was written for the benefit of Japanese units expected to face U. S. troops for the first time in other theaters of operations. Except for editorial changes, the document is reproduced below in the same form as the original.

### **2. THE DOCUMENT**

#### **a. Fighting Spirit**

The fighting spirit of the U. S. troops was unexpectedly high. Before our troops (Japanese 48th Division) landed on Lingayen Bay, they fought a tough battle with the Americans at the water line. We finally won, but only after the enemy had attempted to annihilate us completely.

After we had attacked Manila, we expected the Americans to surrender at a suitable time (after they had fought enough to save their reputation). However, continuing resistance on Bataan Peninsula, the enemy troops unexpectedly tried a strong offensive.

At the time of our second all-out attack on Bataan, we thought that the U. S. forces might surrender if we broke

through their front-line positions. However, they did not stop resistance until the last stage of the fight.

We thought that they would give up when we occupied the Bataan Peninsula, but they continued fighting under our successive artillery and air bombardments at Manila Bay.

Also, on Corregidor Island, they executed several counter-attacks before they were pressed into the entrance of the island's main base. They finally surrendered when everything was exhausted.

The main reasons why we won was because we landed a few tanks at a time when the Americans had no antitank guns with which to oppose us.

### **b. Command and Control**

We admired the manner in which the Americans, under difficult conditions, commanded the Philippine forces until finally forced to stop resistance.

According to prisoners' notes, taken during the Bataan operations, there were many U. S. commissioned officers who bravely led native forces to the front lines. The rumor that only Philippine forces were used in the front lines is all false, because the Americans and Filipinos fought side by side.

### **c. Regarding Tanks**

As a general rule, U. S. tank units moved forward bravely. In the vicinity of Carmen (Pangasinan), a certain U. S. tank officer, covering the retreat of enemy forces, resisted to the last and was taken prisoner with a mortar wound. On the Bataan Peninsula, our (Japanese) 16th Division suffered heavily from enemy tanks which moved through the jungle.

The front armament of U. S. tanks is so thick that our rapid-fire bullets do not penetrate. Also, the movement of enemy tanks was much superior to ours.

**d. Regarding Weapons and Vehicles**

U. S. rifles proved superior to ours. The enemy's automatic rifle was used very effectively against us. Soldiers equipped with the automatic rifle carried a large amount of ammunition.

The Americans have many different types of vehicles which are strong and superior. They transport all their weapons by vehicles, of which there are many special kinds.

**e. Training**

According to reports from Northern Tengen (Lingayen), native troops held rifle practice on the river lines prior to the invasion. We concluded that this training was very good because their shots were very effective all during the battle in that area.

## **Section V. COMMENTS ON JAPANESE BY BRITISH SOLDIERS**

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### **1. INTRODUCTION**

The personal observations of several British officers and enlisted men on Japanese tactics and equipment as used in the Arakan campaign (Burma) are reproduced below. Some of the individual comments have been paraphrased to eliminate repetition. The comments represent the individual views of the men quoted, and are not necessarily the official British thought on the subjects discussed.

### **2. THE COMMENTS**

#### **a. Movement**

*Staff Officer:* On the offensive in the jungle, the Japanese almost invariably select the most difficult routes by which to approach their targets. They move in small, self-contained detachments with their equipment, food, and other supplies. Each of these detachments sends out its own patrols and "feelers."

The Japanese objectives have invariably been the principal terrain features—high ground, roads, and strategically located villages. In order to gain these objectives, the Japs usually infiltrated into the British positions. Since the British did not have enough troops to man a continuous line in the area, the enemy was always able to infiltrate successfully. After forcing British withdrawals, the Japanese then brought up their rear units and attempted to repeat the process.

**b. Patrol Tactics**

*Lieutenant:* When meeting a British patrol in column during the day, it apparently was a standard practice of the Japanese to split their patrol and send one group to the left of the trail and another to the right. These groups then moved through the jungle and tried to cut off our patrols from the rear.

These tactics were successful when our men tried to go back toward friendly troops over the same trail by which they had come out. The Japs usually failed, at least in a large measure, whenever our men stealthily took to the jungle to wipe out the enemy, or forged ahead on their mission, without regard to their line of communications.

**c. Deception**

*Platoon Sergeant:* Shortly after the Japanese had launched a night attack—by throwing a few hand grenades, firing a few machine-gun bursts, and setting off some firecrackers—they sent a column marching down a hill by twos. When challenged by a sentry, the Jap leader made some evasive remark in a native Burmese dialect and kept marching. We fired on the column at a range of 10 yards. It immediately split left and right and charged our troops, using hand grenades and bayonets.

*Staff Officer:* On two occasions when the Japanese attacked in small groups, they drove herds of buffalo ahead of them. This tended to confuse our forces as well as to cover noises of the enemy approach. The Japanese followed the buffalo at a distance of about 20 yards, and thus were able to close with the unsuspecting defenders.

**d. Use of Artillery**

*Staff Officer:* All the Japanese artillery pieces fired to date in a certain area [in Burma] are believed to be the 75-mm mountain gun, which has a maximum range of about 9,000 yards.

To fire this gun, the Japs usually hauled it to the top of a hill. The high position is chosen because the enemy prefers simplicity in the conduct of fire, and because, it is thought, the gun is not very well adapted to clearing crests.

These guns usually fire only one or two shots for adjustment before firing for effect. They usually are fired singly or in twos or threes; except in one particular battle, more than four guns were never fired at any one time. In this instance the fire converged from separate localities.

The Japs frequently fire artillery and mortars at the same time, not only for the combined effect but to confuse our forces as to the location of enemy heavy weapons.

We know that some Japanese artillery ammunition is of an incendiary nature. The explosion of this shell produces an orange-colored burst with a large volume of black smoke.

The Jap high explosive shell has both a delayed-action fuze and one in which the fuze is only slightly delayed.

#### e. Use of Mortars

*Sergeant Major:* Time and time again, our troops, after having captured a portion of an area defended by the Japanese, were driven back by intense mortar fire which began as soon as the position was penetrated. The Japanese remaining in the area were not very much affected because they were dug in.

*Staff Officer:* It is known that the Japanese fire their mortars on fixed lines, the range to which is determined in advance. In firing on their own positions which have been penetrated or captured by opposing forces, the Japs in some cases have placed their mortars in deep holes, which were kept covered when the weapons were not in action. It is certain that from such positions the radius of mortar fire is limited. From the holes, a mortar could have been focused on one of the enemy's strongly constructed overhead-covered pillboxes.

### f. Night Attacks

*Platoon Leader:* In the only Japanese night attack in which I participated, the enemy opened by firing a single heavy machine gun at us from a distance of about 100 yards. When our Bren guns returned this fire, the Japanese gun continued to fire straight ahead as usual, as a feint. At the same time, Jap infantry infiltrated between our guns—which had revealed their positions by firing—and attacked my platoon from the flanks and rear.

The Japanese are proficient at sneaking forward at night and, at dawn, lobbing rifle grenades on our positions from a range of about 200 yards.

### g. Snipers

*Private:* Japanese snipers are often covered by another rifleman, who usually is a short distance to the rear. Most of the snipers we encountered were located in small pits dug under fallen trees, or under the roots of certain types of trees.

### h. Communications

*Company Commander:* As means of signaling at night, the Japs have sometimes crowed like roosters and barked like hyenas. They also have frequently used red lanterns, and, in rear areas, red Very lights.

## PART Two: GERMANY<sup>1</sup>

# Section I. GERMAN RULES FOR USE OF CONTAMINATION BATTERIES

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### 1. INTRODUCTION

If any proof of the importance of U. S. antigas training is needed, it is strikingly furnished by a German Army manual containing regulations for the employment of "contamination batteries." These batteries have the defensive mission of contaminating tactically important terrain with persistent gases. Significant extracts from the manual are given in this section. It is recommended that a previous *Intelligence Bulletin* article on German gas warfare (see Vol. I, No. 7, pp. 31-37) be read in connection with the following.

### 2. TERRAIN CONTAMINATION

- a. Terrain contamination will be undertaken only on the order, or by the authority, of the High Command.
- b. The attackers can seldom be completely stopped by terrain contamination alone. By means of increased and intensified

<sup>1</sup> In *Intelligence Bulletin*, Vol. I, No. 11, p. 29, par. 3, a U. S. Army officer was quoted as saying: "Over 1,200 yards there was no use worrying about the 88. Its fire bounced off our medium tanks at that range." It has since been established, however, that German 88-mm guns constitute a danger to U. S. medium tanks at any range up to 5,000 yards.

fire, the defenders must follow up whatever advantage they have gained.

c. There are two types of terrain contamination: harassing contamination and blockading contamination.

Harassing contamination, which is the lighter form, will confuse the attacking forces and delay their advance. Patches, strips, and areas may be contaminated.

Blockading contamination delays the hostile forces even more effectively, and inflicts heavy losses on them as they work their way through. It consists of a thick network of contaminated patches, strips, and areas of great density, and is most effective when it covers a large zone.

By laying down a harassing contamination very quickly, the defenders can often gain time in which to lay down an extensive blockading contamination to the rear.

d. To deceive hostile forces, sham contaminations are useful. For this purpose harmless compounds, which resemble war gases in appearance and smell, will be laid down. The effectiveness of the deception will be increased if actual contamination is employed here and there.

e. Contaminated terrain must be filled with obstacles and dominated by fire, so that hostile forces, instead of being able to cross it quickly in vehicles or tanks, will be compelled to fight their way through it.

Combat patrols [German] will remain in the contaminated zone to hinder decontamination with their fire. These patrols will use contamination-free paths, or will go through the contamination, wearing light gas-proof clothing.

f. For tactical purposes, terrain is suitable for contamination if hostile forces are likely to consider it useful for observation and effective siting of weapons. Approach roads, bridges, entrances to woods and other localities, and possible assembly areas and communication centers are among the many types of places which lend themselves to contamination.

g. In carrying out contamination, remember the following points:

(1) Spray vehicles can be used only in areas that the hostile forces cannot cover with observed fire. If the hostile forces are able to employ observed fire, contamination must be carried out by means of portable spray apparatus.

(2) Before contamination is laid down, it will be advisable to select men from all units which are to fight a delaying action in front of the area to be contaminated, and instruct them how to guide their units to safety when a withdrawal is ordered.

(3) The contamination of terrain may be begun either on receipt of an order from the battery commander, or at a later hour fixed by him, or when the combat situation reaches a definite state foreseen and specified by the battery commander—for example, when the rearguard reaches a specified line.

(4) If full instructions regarding the contamination mission go down as far as squad leaders, the contamination can be carried out at night. However, much more time will be required at night than in the daytime. There is also the risk that, because of the difficulties involved in maintaining a satisfactory warning service at night, personnel belonging to other arms will wander into the contaminated area.

(5) Besides providing chemical troops to operate spray apparatus, the contamination battery will maintain sentries in front of contaminated areas and along contamination-free paths. All these men must know their missions precisely. They will be instructed to move direction signs and gap markers, either when they leave the area to assemble elsewhere, or in the event that hostile forces succeed in penetrating the area prematurely.

## **Section II. SOME BASIC PRINCIPLES OF COASTAL DEFENSE**

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Some basic German principles of coastal defense are summarized in the following notes, which were compiled by a German Army officer.

### **1. ORGANIZATION OF STRONG POINTS**

Defense will be organized in the form of strong points. In the selection and organization of these strong points, the following questions must be taken into consideration:

- a. In which localities are landing facilities available to the opposing forces?
- b. Which landing beaches have good exits into the interior?
- c. Where are important installations situated, the possession or destruction of which would be of interest to the enemy?
- d. Which parts of the coast do not lend themselves to landing operations?

When strong points are to be organized in regions which lend themselves to landing operations, special attention must be paid to the following:

- a. Weapons must command the greatest possible stretch of terrain. However, there are two reasons why it is not advisable to site weapons on high points which overlook the general terrain; first the beaten zone is restricted, and, second, since the weapons cannot engage objectives within close range, the hostile forces can penetrate under the angle of fire.

- b. When there is a shortage of military personnel, the number of strong points which can be maintained will probably be so reduced that thorough observation of an extended coast-

line will be impossible. In the daytime, therefore, it will be necessary to place detachments with at least some degree of striking power between strong points. Whenever possible, the detachment should be a section, whose weapons include a light machine gun. Each man must be instructed in the methods by which an alarm is to be given if hostile forces approach. At night, patrols will use bicycles insofar as the terrain permits.

## **2. ORGANIZATION OF DEFENSE AREAS**

Whenever possible, each company will keep a platoon in reserve. The machine-gun companies will be separated into platoons, and placed under command of the rifle companies. If circumstances permit, a machine-gun platoon will be kept in the rear with the battalion reserve. All heavy machine-gun personnel in the regiment should be reconstituted into heavy machine-gun detachments. [There are normally 36 heavy machine guns in a German infantry regiment.] Speedy communication between all strong points must be provided; telephone messages, direct or relayed, will be used wherever possible. If a defense area is so large that no company can be spared to serve as battalion reserve, all available personnel not ordinarily used for combat will be employed for counterattack. Each defense-area commander will have authority over all arms of the services within his defense area, and will incorporate in his defense plan a provision for utilizing all German Army personnel within the area.

## **3. USE OF ARTILLERY**

Coastal batteries will be sited principally at those points where it is expected that the strongest resistance will be necessary. Batteries will not be placed in exposed positions close to the shore; they will be sited somewhat inland and under cover, but in such a way that they can engage the coastal belt during a landing. This will give better results than the engagement of targets at sea.

Plans must be made for coordination of artillery. All existing means of communication will be put to use, and radio sets will be kept as mobile as possible. The use of coastal batteries for firing in an inland direction will be successful only if observation posts have been installed. Map firing amounts to a waste of ammunition, and endangers our own soldiers.

#### **4. CONDUCT OF BATTLE**

Strong points will be defended, no matter what the situation may be, and even if hostile forces achieve a break-through. Local reserves will be used in the counterattack. If the counterattack fails, the opposing force's advance must be blocked from positions in the interior. These positions must be held until a planned counterattack by a larger reserve is successful.

NOTE.—The foregoing is of course general. Certain specific aspects of German coastal defense are discussed in the next two sections. The reader is also referred to the following M. I. S. publications: "German Coastal Defenses" (Special Series No. 15) and the forthcoming "German Doctrine of the Stabilized Front" (Special Series No. 17).

## **Section III. BARBED-WIRE OBSTACLES**

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### **1. GENERAL**

With the German Army increasingly on the defensive, it is pertinent for us to know as much as possible about the enemy's employment of barbed-wire obstacles in continental Europe. A classic asset of the defense, barbed wire naturally plays an important part in the coastal and inland defense systems that the Germans are hurrying to complete in the occupied countries. The following aspects of German wire technique have recently been observed in France, The Netherlands, and Belgium.

On beaches, barbed wire is usually erected in straight lines, parallel to the shore and in front of fortified areas. Between these fortified areas, the lines of wire jut out at right angles toward the sea.

Around emplacements and fortified areas, the depth of wire obstacles varies, depending on the nature of the terrain and the importance that the Germans attach to the site. In some places the depth may range from 30 to 60 yards; in other positions, it may range from 70 to 130 yards, or may be as much as 200 yards. As a rule, the distance between the outside edge of the wire and the nearest pillbox or other firing position is at least 30 yards.

In gullies and in the crevices of cliffs, if ascent is considered at all possible, the Germans install dense wire entanglements. In front of these, the enemy sometimes places small-mesh wire, evidently for the purpose of slowing any advance in which Bangalore torpedoes might be used. Halfway up the gullies and crevices, the entanglements usually begin to thin out. Sometimes they continue as single fences running along the tops of the cliffs, near the margins.

In conjunction with road blocks, a wire fence or entanglement is often erected on each side of the road, and the gap between is closed by movable gates of various types. In many places concrete walls and other more substantial types of barriers are replacing wire entanglements as road blocks; however, wire is nearly always used on top of these wall barriers, for additional protection. Wall barriers and concrete emplacements are likely to have iron staples in them so that wire entanglements can be firmly secured.

Often the Germans use wire to fence off all sides of a minefield. Such fences consist of a single row of pickets connected by five or six strands of wire. Also, a thin belt of wire is commonly found outside antitank ditches.

The Germans are now making extensive use of a new type of barbed wire. This new type is made of a non-corrosive metal, and is thicker than ordinary wire. It is square in cross-section, rather than round. The wire, which is twisted, has  $\frac{3}{4}$ -inch barbs, 4 inches apart.

## 2. SPECIFIC TYPES

The following are specific types of wire obstacles that the Germans are erecting in France, Belgium, and The Netherlands. Several of these types were encountered in North Africa, and any or all must be expected wherever the Germans have had an opportunity to prepare defenses. The dimensions given here are approximate.

### a. Knife Rests

X-shaped metal knife rests, or "chevaux-de-frise," strung with wire, have been observed above the high water mark on beaches. Sometimes this type of obstacle consists of four trestles connected by a cross-bar, and has the following dimensions:

Height-----	4 feet
Span of trestle legs-----	4 feet
Distance between trestles-----	4 to 5 feet
Length of four-trestle unit-----	16 to 20 feet

### b. Apron Fences

These may be single or double aprons. They are supported by screw pickets or by angle irons embedded in concrete to a depth of about 18 inches. Often a coil of concertina wire is placed under a double apron fence, and sometimes another coil is placed along the top. The dimensions of a typical apron fence are as follows:

Height-----	4 to 5 feet
Height (with coil on top)-----	7 to 8 feet
Width-----	Up to 30 feet

**c. Vertical Fences**

Ordinary vertical fences are always installed in two or three lines, from 4 to 8 feet apart. Each fence has five or six strands of wire, and is 4 to 6 feet high. The wire is supported by wooden posts, angle irons, or screw pickets. The spaces between fences are frequently filled with wire entanglements and mines.

**d. Concertina Fences**

Single, double, or triple coils of concertina, supported by angle irons or screw pickets, are often used as fences. Triple coils are frequently affixed to the protecting rails of the beach promenades which are so common in the coastal towns of western Europe.

**e. Trip Fences**

Trip wires are often laid in front of important beach obstacles. These wires will usually be found between the high-water mark and the first barbed-wire entanglement. They are also used in the minefields in front of main defensive positions and main obstacles. Trip fences have the following dimensions:

Height.....	4 to 6 in
Length of each diagonal or diamond-shaped section.....	4 to 6 ft
Width of whole obstacle.....	12 to 20 ft

**f. Alarm Wires**

The Germans often place some form of alarm device in barbed-wire fences. Grenades and small explosive charges are common. Insulated live wire, which rings

a bell as soon as it is cut, has also been encountered. It must be remembered that almost any kind of improvised alarm device will serve the defenders' purpose, provided that it produces enough noise to warn effectively.

#### **g. Electrified Wire**

Electrified barbed wire, attached to pickets by means of insulators, has been reported. This type of obstacle is not used on a very large scale, however.

#### **h. Combined Fences**

A typical combined fence consists of the following units, in sequence: A trip wire, a trestle fence or knife rest, and an apron fence. The apron fence is likely to be from 10 to 20 yards behind the trestle fence or knife rest, and the total depth of the whole combination may be from 30 to 60 yards. On the sea fronts of towns, the Germans usually erect an apron or knife-rest fence on the beach, and a concertina or apron fence on top of the sea (retaining) wall or beach promenade.

### **3. STANDARD TECHNIQUE**

The *Intelligence Bulletin* distinguishes between German technique which has actually been observed, and that which is prescribed in German training documents. Some notes regarding the latter are given below.

### a. Obstacle in Depth

This type of obstacle is constructed to a depth of about 33 feet. It consists of ordinary wire fences erected at intervals of about 5 feet and connected with crisscrossed plain wire (see fig. 7). The spaces be-

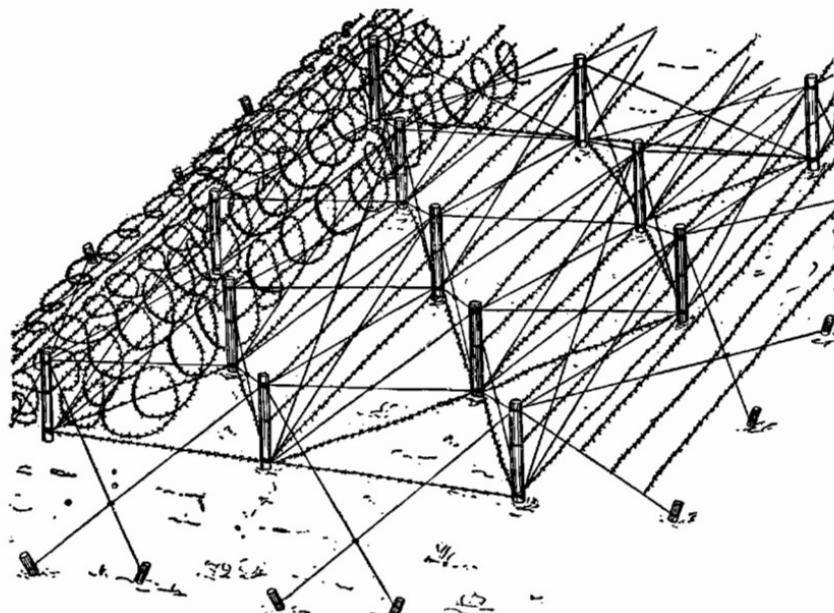


Figure 7.—German Obstacle in Depth.

tween the fences are filled with barbed wire in spirals. These spirals are fastened to each other and to the pickets of the crisscrossed wire. When obstacles of this type are erected in woods, trees are often used to support the wire.

Wire obstacles in depth are usually installed in places where they will be screened as far as possible

against observation by opposing forces. Woods, hollows, sunken roads, and heavily overgrown reverse slopes are sites especially favored by the enemy.

### **b. Wire-netting Fences**

The Germans use wire netting as an emergency obstacle against infantry. They believe it to be most effective in woods and on the near side of hedges, and recommend that it be secured to the ground with wire and pickets. An obstacle of this type illustrated in a German training manual is 6 feet 6 inches high.

### **c. Trip-wire Obstacles**

German training doctrine prescribes that these obstacles be at least 30 feet in depth. Irregular rows of wooden pickets, 2 feet high and 3 inches in diameter, are driven into the ground, and barbed or plain wire is stretched between pickets, at a height of 4 feet 8 inches. The interval between pickets in a row is 10 to 13 feet, and the interval between rows is 7 to 10 feet. Freshly cut pickets are painted to blend with the surroundings.

Trip-wire obstacles can be concealed effectively in gullies and on ground covered by low growth, especially if rusted wire is used. Mines and booby traps, equipped with pull-igniters, may be combined with these obstacles.

## **Section IV. TYPES OF CONCRETE ANTITANK OBSTACLES**

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This section deals with the principal types of concrete antitank obstacles erected by the Germans in the coastal defense zones of France, Belgium, and The Netherlands.

### **1. WALLS**

#### **a. General**

The Germans make a practice of constructing concrete antitank walls in all coastal areas where a strong defense is planned. Walls of this type are used to block streets and roads in coastal towns, at the approaches to strategic points, and on the outskirts of towns, generally. Often the Germans prepare a continuous obstacle along the entire sea front of a town by constructing concrete walls in line with the front elevation of existing buildings. First, rough timber shuttering is erected along the site proposed for a new wall, and then the concrete is poured. Light steel reinforcement is sometimes used, but often there is no reinforcement at all. Often metal hooks project from the top of a wall, to serve as anchors for barbed wire (see p. 41).

To improve the effectiveness of a concrete antitank wall, the Germans often dig a ditch in front of the

obstacle or prepare a tank trap in the form of a pit covered with planks and gravel, or garnished netting.

In areas where there are quarries which can supply large quantities of stone, road blocks are often constructed of the native stone, instead of concrete.

#### **b. Continuous Walls**

When a continuous wall is erected along the sea front of a coastal town, a minimum thickness of 6 feet is the general rule. It is reported that the average thickness is from 8 to 11 feet. The height of such a wall is usually from 6 to 8½ feet.

#### **c. V-shaped Walls**

The Germans frequently erect V-shaped walls across the roads or tracks leading inland (through defiles between cliffs and dunes) from beaches. The point of a V-shaped wall is always toward the sea. These walls are especially common in open coastal stretches between towns. The dimensions of walls of this type are similar to the dimensions of continuous walls. It must be expected that the apex of the V will contain gun emplacements, or that the entire V will have been built to serve as a pillbox.

#### **d. Walls with Gaps**

When the Germans build a concrete wall with a gap, the gap is usually wide enough to allow only one vehicle to pass through at a time. The gap can be closed by means of girders, rails, or gates fitted into sockets imbedded in the wall.

It has been reported that in certain European coastal areas the Germans use an interesting type of staggered double road block. These obstacles consist essentially of a pair of walls or barricades, sited one behind the other, but projecting from opposite sides of a road. Each wall projects across 1/2 or 2/3 of the width of the road. These walls, which are never less than 6 feet thick, may be of masonry or concrete, or may simply consist of log barricades filled with earth or sand. The horizontal and vertical logs are about 1 foot in diameter. The vertical logs are driven deep into the ground, and additional resistance is provided by diagonal bracing. Obviously, such obstacles are intended to slow down advancing vehicles, and thereby render them much more susceptible to attack.

## 2. OTHER CONCRETE OBSTACLES

### a. Dragons' Teeth

Concrete obstacles known as "dragons' teeth" are used by the Germans to block streets, exits from quays,<sup>1</sup> and well-defined beach exits where the level

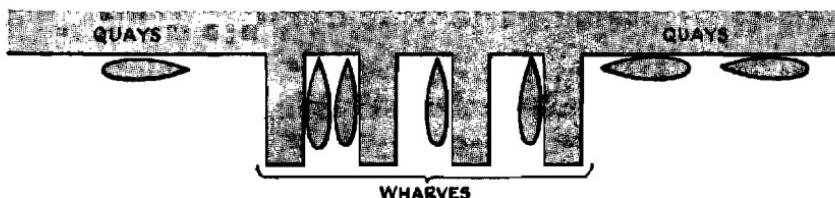


Figure 8.

<sup>1</sup> Figure 8 illustrates the difference between wharves and quays. The latter are very common in European ports.

of the beach is approximately the same as that of the roads leading inland. A typical arrangement consists of four to eight staggered rows of tapered dragons' teeth, with 6 to 8 feet between the teeth in each row and 6 to 8 feet between rows. Often the bases of the teeth are connected by concrete beams, in lines parallel with the road; this is a means of reinforcing the obstacles against possible overturning. The total height of these obstacles may be from 3 to 6 feet.

#### **b. Plain Blocks**

Plain concrete blocks are used in the same way as dragons' teeth, but are also found in defiles between sand dunes, which might afford an entrance inland for vehicles even though no well-defined road exists. These blocks are arranged in from one to three rows, and are not always staggered. In dune country they are also found on forward slopes, near the crests. The blocks may be rectangular (3 feet wide on each side and 4 feet high) or cylindrical (3 to 4 feet in diameter and 4 feet high).

### **3. RAILS EMBEDDED IN CONCRETE**

In coastal towns the Germans often use straight or curved steel rails embedded in concrete to block ramps, promenades, streets, and all other exits leading from beaches. Sometimes three or four lengths of straight rail are combined to form a skeleton pyramid, with their bases embedded in concrete and the tops bolted together. Rail-and-concrete obstacles are generally from  $3\frac{1}{2}$  to  $4\frac{1}{2}$  feet high.

## **Section V. RECONNAISSANCE METHODS**

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### **1. INTRODUCTION**

Russian fighting men have had excellent opportunities to learn about German reconnaissance methods. The information on this subject in the following paragraph has been collected and arranged by Lt. Col. L. Davidov of the Red Army. It should be of special interest and value to our junior officers and enlisted men.

### **2. ANALYSIS OF GERMAN RECONNAISSANCE**

The Germans place great emphasis on reconnaissance. Dozens of orders and memoranda issued to German Army units include reminders that land reconnaissance must be conducted by all branches, regardless of whether or not this type of work is their primary responsibility.

During periods of inactivity on the fronts, German land reconnaissance attempts to learn:

- a. The location and extent of our defensive lines.
- b. The location and composition of our strong points.
- c. The differences between our day and night dispositions.
- d. The location of our obstacles and minefields.
- e. The movement and new positions of our units.

German land reconnaissance tries to report accurately and in detail the dispositions of our troops, heavy artillery, headquarters, and reserves. Regarding all changes in our units as significant, the enemy attempts to discover these changes and to draw conclusions which can be put to use. This reconnaissance

is carried out by observers, listening sentries, patrols, or battle (reconnaissance in force).

Special attention is given to the reports of the listening sentries. Under cover of darkness, these men crawl as close to our lines as possible, and try to plot and fix the location of various sounds—especially to gain information about our tanks, our reserves, the movement of our patrols, the location of our new artillery positions, and regions in which digging is in progress. Although the listening sentries can sometimes discover important data, we are repeatedly able to deceive them by means of ruses. Since the listening reports are checked in the daytime by German visual observation, we are obliged to deceive the visual observers, as well, for the sake of consistency. For example, if we imitate tank sounds at night for the benefit of German sentries in a certain locality, the next day we must see to it that there is some sort of camouflage in the same place.

Reconnaissance by combat patrols—usually a platoon—is most often done at night. These patrols, armed with hand grenades and machine pistols, generally operate without artillery support. They try to reach positions on the flanks of our units without attracting our attention, and then suddenly attack a previously assigned objective for the purpose of capturing a “tongue.” (In general, the objectives are those which have been discovered by lookouts and listening sentries). After capturing a number of outposts, the Germans send details of two and three men into our rear areas. Our wide-awake unit commanders often take advantage of these tactics for the purpose of counter-reconnaissance.

If the Germans are unable to locate our outposts and flanks, or believe them to be well hidden, reconnaissance by a patrol is preceded by artillery and mortar fire. Under such circumstances the raiding party is divided into attacking and supporting groups. As a rule, one or two small groups make a frontal advance, while the remainder attack the designated objective from the flanks. Two or three days before this type of

operation, the Germans place ranging fire on the objective and nearby positions. After this preparatory fire, the Germans do not fire again in this region until they are ready to attack. (However, during daylight it is not difficult to detect the movements of small groups of soldiers who are being instructed in the methods to be used for the attack and fire support. It is also fairly easy to detect a group of officers on a reconnoitering mission.) When the Germans are thoroughly prepared, they launch a night attack. If Russian units detect the approaching groups and open fire on them, the Germans signal for the previously prepared artillery and mortar fire.

Reconnaissance in force is the most ambitious of all German reconnaissance missions. As a rule, it is directed against a well-fortified position, and precedes an offensive. (Before such a reconnaissance, small groups, like those described above, will have tried to define the boundaries of the main objective.) The unit which is to perform such a reconnaissance may vary in size from a company to a battalion with artillery support. If the Germans expect to encounter unusually well-fortified positions with prepared obstacles, a unit consisting of combat engineers, heavy artillery, and a number of tanks is integrated into the reconnaissance party.

The Germans try to conduct a reconnaissance in force with all the speed they can achieve. If their first attempt is unsuccessful, they often repeat an attack, sometimes immediately after the first failure. Such an attack generally occurs during the second half of the night or at daybreak. During the daylight hours the objective is placed under intensified observation.

Characteristic methods of German reconnaissance are clearly illustrated by an action which was attempted against the Nth unit of our army. Two days before the time set for a reconnaissance in force, a group of German officers conducted a reconnoitering tour. That same day there was a brief artillery barrage, apparently for ranging. After this there was no action whatever in the sector—no doubt the scheme was to lull the

defenders into a sense of security. Two days later, during the second half of the night, the Germans opened concentrated artillery and mortar fire on the same sector. Under cover of this fire, a German reconnaissance unit, divided into three parts, advanced. Presently a German signal light went up, and the artillery fire was shifted to neighboring strong points. Simultaneously, two groups, supported by the small-arms fire of the third, made a quick rush on our trenches. We met the three groups with concentrated artillery and machine-gun fire. This forced the enemy to retreat. We have learned that when we can perceive the enemy's intentions, it is a good policy to allow these first groups to approach our positions so that we can annihilate the attackers at close range.

Finally, a word about German counterreconnaissance. Highly resourceful officers and soldiers are chosen for this work. These men take up positions as near our lines as possible. Their primary task is to determine the intentions of our reconnaissance patrols; their secondary task is to locate our minefields and learn the boundaries of our positions.

## **Section VI. FURTHER INFORMATION ABOUT GERMAN TANKS**

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### **1. ARMOR ARRANGEMENT**

The sketches on the next three pages show the armor arrangement and armor thicknesses of the Pz. Kw. 3, Pz. Kw. 4, and Pz. Kw. 6. A question mark following a figure indicates that definite information regarding the thickness of a certain plate is not yet available. Two figures enclosed in parentheses indicate the presence of two plates, which are separated to form "spaced armor"; this arrangement occurs only twice, and only in the case of the Pz. Kw. 3.

### **2. SUBMERSIBLE TANKS**

The delays and difficulties that the Germans have encountered in transporting tanks across the rivers of Eastern Europe have increased the enemy's interest in all possible devices which might enable standard Pz. Kw. to cross streams and rivers under their own power.

By the summer of 1941, the weight of the Pz. Kw. 3 had already been increased by additional armor, and it must have been clear to the Germans that future developments in armor and armament would necessarily involve still further increases in the weight of this tank. While the trend toward increased weight

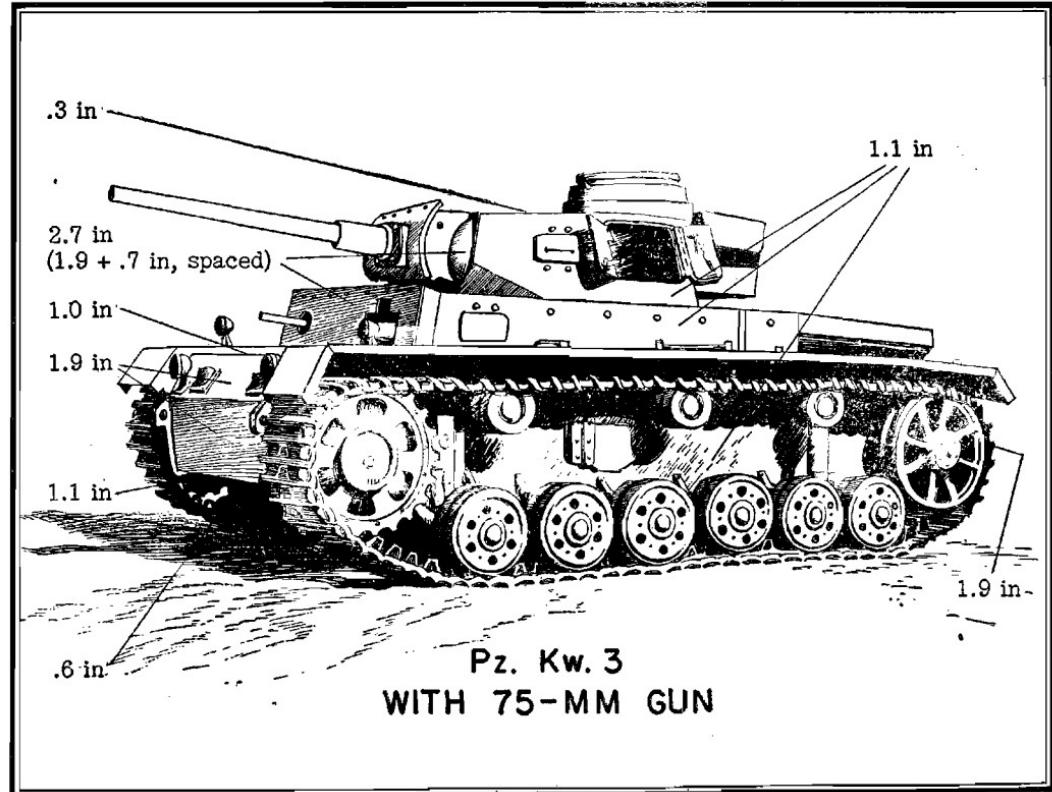


Figure 9.

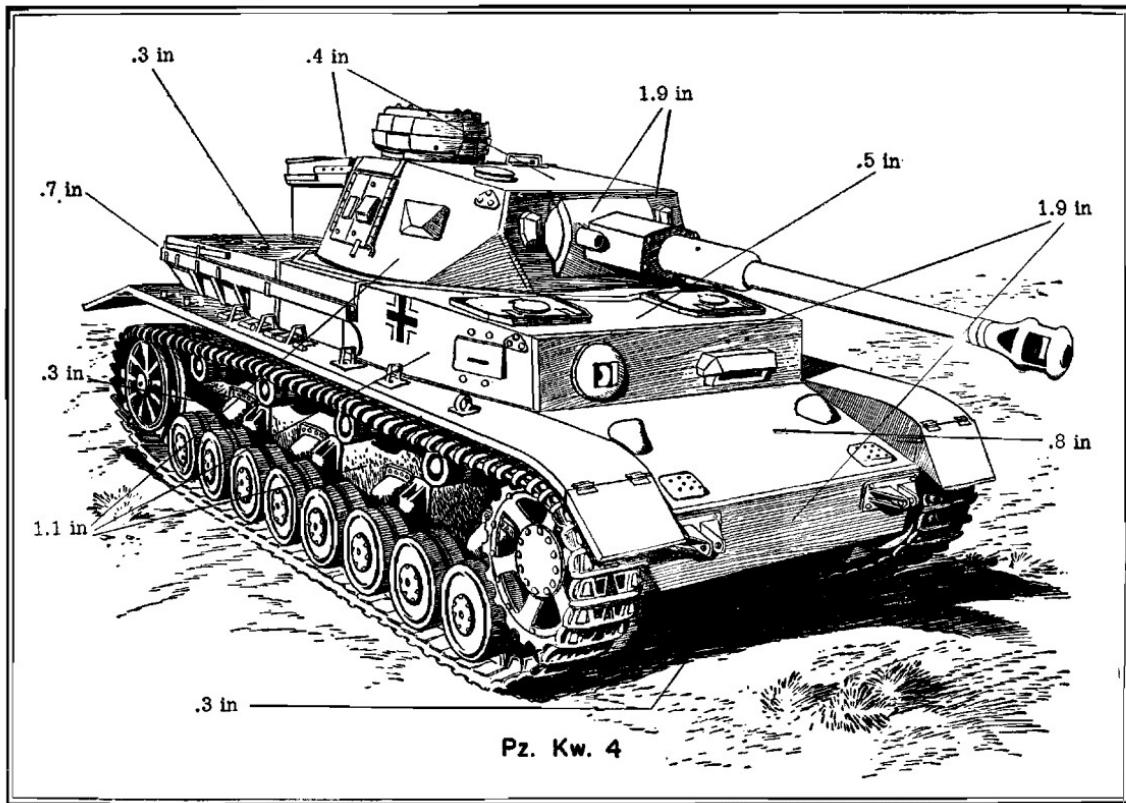


Figure 10.

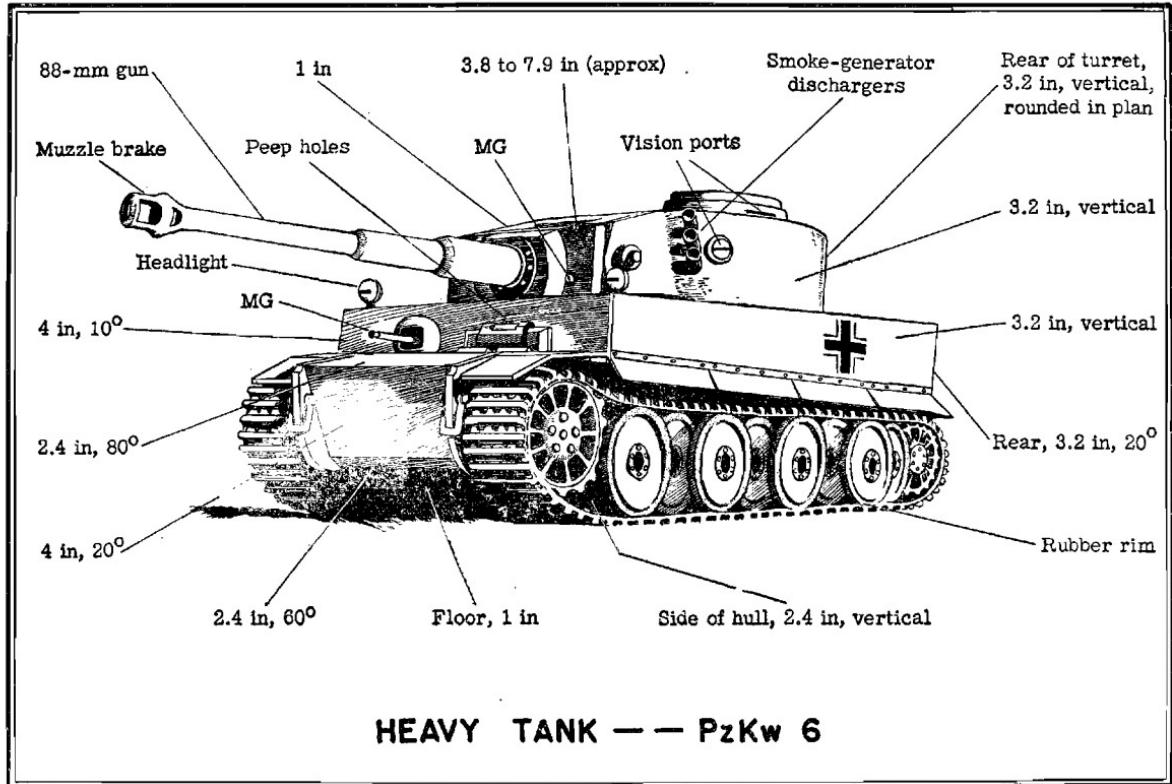


Figure 11.

was a disadvantage in many ways, it was definitely helpful in overcoming one of the biggest difficulties that the Germans had previously encountered in adapting standard tanks for submersion—namely, the difficulty of getting enough track adhesion.

It therefore is not surprising that the Germans, in the early stages of their campaign in Russia, were actively experimenting with standard Pz. Kw. 3's modified for submersion. It is reported that these experiments met with a certain amount of success, and that the modified tanks made underwater river crossings under combat conditions. The measures employed are said to have included the sealing of all joints and openings in the tank with rubber and the introduction of a flexible air pipe, the free end of which was attached to a float. The supply of air for the crew, as well as for the engine, was provided by this flexible pipe, which permitted submersion to a maximum depth of 16 feet. It took trained crews 24 hours to prepare the tanks for submersion.

In April 1943, a Pz. Kw. 3 (Model M) examined in North Africa was found to have been permanently modified for immersion, if not for submersion. Although reports on this tank did not mention a flexible pipe with float, such a pipe may have existed and have been destroyed by fire. The air louvres for the engine were provided with cover plates having rubber sealing strips round their edges. These cover plates, which were normally held open by strong springs, could be locked in the closed position by hooks before submersion. After submersion, the springs could be

released by controls inside the tank. When the tank submerged, air for the carburetor and cooling fans was apparently drawn from the fighting compartment. Therefore, if a flexible pipe was used with this tank, no doubt its purpose was to supply "replacement" air to the fighting compartment. The two exhaust pipes led to a single silencer mounted high on the tail plate, with its outlet at the top. This outlet was fitted with a spring-controlled, one-way valve, which could be kept in the fully open position during normal operation on land.

More recently, documents and reports from Russia have shown that the standard Pz. Kw. 6 (Tiger) is equipped for submersion to depths of as much as 16 feet. In this tank there is provision for hermetic sealing of all joints and openings. The doors and covers are provided with suitable rubber seals. The radiators are separated from the engine by a watertight partition so that, when the tank is submerged, they can be cooled by water from outside the tank, after the cooling fans have been switched off. In this case carburetor air is drawn through a flexible pipe, the free end of which is supported by a float, but there appears to be no additional supply of air for the crew. A small bilge pump is also fitted to dispose of any water which may leak into the hull.

It is clear that the Pz. Kw. 6 requires only a slight amount of preparation by its crew before submersion, and that its design must have been influenced by the requirement that it quickly be made submersible. It is quite possible that the Pz. Kw. 3 could be submerged to

a depth of more than 16 feet if it were fitted with a longer air pipe. Although the Pz. Kw. 6 is not much larger than the Pz. Kw. 3, it is nearly three times as heavy, and track adhesion is therefore not likely to be a serious problem.

## **Section VII. MISCELLANEOUS**

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### **1. DIRECTIVE FOR DEFENSE OF POSITIONS**

#### **a. Introduction**

A few months before the Axis capitulated in North Africa, the operations officer of the German Light Africa Division issued a significant directive. German officers in general—and junior officers, in particular—had been displaying certain weaknesses in defensive operations, and the operations officer was anxious to see an improvement in German tactics, especially with reference to the defense of positions. The document, which follows, has a special interest for us, inasmuch as it gives a clear indication of measures approved by the enemy, if not always practiced by him.

#### **b. The Directive**

(1) Each soldier must remember that the defense of a position will continue, if necessary, to the last man and to the last round. Every commander is fully responsible for the defense of the interdependent strong point assigned to him. It is not permissible, for instance, that the heavy-weapons platoon leader command the heavy weapons employed on the right flank of the company, as well as those on the left flank.

(2) All possible measures must be taken to prevent the opposing force from removing mines or other obstacles laid to the front of our position. Machine guns can be very effective for this purpose.

(3) All available machine guns are to be employed on the flanks whenever possible. At night the machine guns must command the entire terrain to the front. Shortly before dusk each machine gun—every light machine gun included—will therefore be sited so that it can cover a designated zone. The sector of fire will be marked by stakes on the right and left limits, and the elevation will be marked by a wire stretched horizontally.

(4) The heavy weapons and artillery will be so placed (in relation to the light infantry weapons) that their fire power can be directed primarily against important positions and terrain features which the opposing force might conceivably use during its approach.

(5) Officers of all grades will be held responsible for continuous preparedness for defense. Moreover, precise written orders are to be drawn up for each position. Each man must repeatedly be instructed in these orders, and must know them by heart. They must show, among other things:

(a) The position of the hostile force, the defense area, neighboring units, and the security toward the front.

(b) Day and night observation and scouting patrols.

(c) Supervision of order and alertness in the position, fire preparedness of the weapons, and the storage of ammunition.

(d) Action to be taken against hostile artillery fire (for example, "The soldier will take cover in his foxhole, with his machine gun or rifle.")

(e) Action to be taken against low-level air attack (for example, "Machine gunners will fire at their own discretion.")

(f) Action to be taken against thrusts by enemy assault troops (for example, "Alertness will be maintained to detect hostile feints.")

(g) Action to be taken in case of attack by infantry or attack by tanks.

(h) Action to be taken in case adjacent terrain is penetrated.

(i) Significance of pyrotechnic signals.

(j) Password.

(k) Security of communication net.

In forwarding this directive down to companies, the operations officer of the 200th Panzer Grenadier Regiment added, "The written orders mentioned in (5) are to be drawn up immediately for every defensive position, and will be presented to me, without further request on my part, whenever I make an inspection of the position."

## **2. BASIC INFANTRY TACTICS**

A document issued by a German infantry division itemizes the essentials of German infantry tactical training. It is prefaced by a statement that in all situations the chief considerations are reconnaissance, protection, and the fire plan (ground and air). The document lists briefly the fundamentals of the approach march, the attack, and the defense. Certain similarities between German and U. S. tactics will be noted.

### **a. Approach March**

- (1) The work of reconnaissance patrols must be extremely thorough.
- (2) Protection must be afforded by advance units (scouts, advance guards).
- (3) Fire protection must be provided in the assembly area.
- (4) The advance should be made by bounds.
- (5) The main body will be in the rear (commanders well forward).

### **b. Attack**

- (1) Reconnaissance should lure targets into revealing themselves, and should deceive the hostile force as to the intentions of our own [German] units.

- (2) There should be sufficient protection forward of the main attacking force.
- (3) An organized fire plan is a necessity.
- (4) The objective or task of each unit must be detailed.
- (5) The point of main effort (*Schwerpunkt*) must be decided upon.
- (6) *Details.*—(a) The first objective should be visible. (b) As far as possible, the advance should be made under cover. (c) The main effort must be made against an estimated weak point. The main effort must be so flexible that, regardless of the location of the weak point, it can be adapted in any sector to meet the situation. (d) All supporting arms must be informed of the intended point of breakthrough. (e) Reserves may also be brought forward into the flanking sector.

### c. Defense

(1) The main line of resistance (*Hauptkampflinie*) is the forward edge of the main defensive zone. The main line of resistance is often referred to as including the general outposts (*Gefechtsvorposten*) and the covering positions (*Vorgeschobene Stellungen*), although both are in reality forward of the main line of resistance. The fire of all weapons must be planned so that it can be concentrated forward of, and within, the main line of resistance.

(2) It is the task of reconnaissance and observation to discover the intentions of the hostile force.

(3) The covering positions must conceal the actual location of the main line of resistance. The personnel manning the covering positions will fall back slowly, fighting a delaying action.

(4) The general outpost must goad hostile targets into revealing themselves, and then withdraw to the main line of resistance.

(5) The fire plan must include the coordination of the fire of all arms, arrangements for barrages and concentrations, the numbering of targets, and indications as to whether the tar-

gets are suitable primarily for infantry or artillery fire.

(6) *Details.*—(a) The fields of fire allotted to positions manned at night will be under the personal supervision of the company commanders. (b) Platoon commanders must be informed about all positions, and about the tasks of support weapons located in their sectors. (c) Each squad must have its own orders for defense. (d) The company commanders will determine the need for local reinforcements, and will arrange for defensive fires within their own sectors. (e) Only regimental commanders may order local withdrawals.

### **3. TANK RUSE TO DECEIVE ARTILLERY**

U. S. artillerymen—and forward observers, in particular—will be interested in a ruse which was employed by a German tank unit in Tunisia. This tank force was located by a U. S. observer, who immediately prepared fire data to rout the enemy. Fire promptly got under way. At the second volley, the Germans put into operation a plan designed to confuse our artillerymen:

The Germans calculated the time of flight of the projectiles, and then listened for the report of the third volley. When it came, they shrewdly took the time element into account and fired their own tank pieces to conform with the strike of our own artillery fire. The Germans directed their fire first to one of their flanks and then to the other, at various ranges. Since our own artillery fire fell simultaneously in the same general area, our forward observer was unable to distinguish our fire from the enemy's and therefore could not register.

This continued for several minutes, with the artillery observer frantically trying to figure out the correct deflection and range. Then, by means of close observation, he discovered the technique that the Germans were using, and soon had them on the run.

As a U. S. soldier who took part in this action expresses it, "There's one thing we've always got to remember: in fighting the Germans, we're up against a cunning, imaginative enemy!"

#### **4. HANDLING OF PRISONERS**

It was a German practice in North Africa for units down to platoons to designate one or more soldiers who were to undertake specific escort duties if prisoners were captured. These designated soldiers were to cease fighting immediately, upon the order of their company commander or platoon leader, and were to take charge of the prisoners. It was stipulated that the following procedure be carried out:

a. The soldier in charge was to search all prisoners thoroughly immediately after their capture. The prisoners were to lay down all weapons, including pocket knives, at once. If this order was not complied with, the soldier in charge was to use firearms against the offenders.

b. If the tactical situation permitted, the prisoners were to be marched back, in formation, to the temporary battalion prisoner-of-war collecting point. Officers, noncoms, and enlisted men were to be marched back in separate groups. The escorting German sol-

diers, holding their rifles (with bayonets fixed) ready for action, were to march on either side, and to the rear, of the group. Prisoners attempting to break away and escape were to be dealt with immediately by the use of firearms.

c. Of the prisoners' possessions (besides their weapons), only documents, letters, plans, sketches, and photographs were to be confiscated.

## **5. "THIS MUST NOT OCCUR AGAIN"**

The enemy's eagerness to capture U. S. documents is illustrated by this German divisional order, which should serve to remind *Intelligence Bulletin* readers of the paramount importance of security in the field:

Troops must pay greater attention to the collection of captured documents, and must submit them promptly to the proper authorities. Such documents include all official and personal mail found in the enemy's possession. It has been reported to the Division that filled mail bags belonging to the enemy have been left lying about and have not been brought in as booty. This must not occur again. Captured documents disclose important and reliable information concerning the enemy and provide clues to his formation, strength, and plans. These clues greatly facilitate our conduct of the war.

## **6. RAILROAD PATROL CAR (ARMORED)**

In an effort to reduce the damage that Russian raiding detachments are inflicting on railroad tracks in German-held territory, the Germans are hastily improvising railroad patrol cars out of truck parts, captured Soviet reconnaissance vehicles, and the armor plate of partly destroyed tanks. The unorthodox result

is known as an "armored Zepp" (see fig. 12). An "armored Zepp" is employed to rush an assault detachment of Panzer Grenadiers to any section of a railroad where the presence of Russian demolition troops is suspected.

The Panzer Grenadier assault detachment can de-

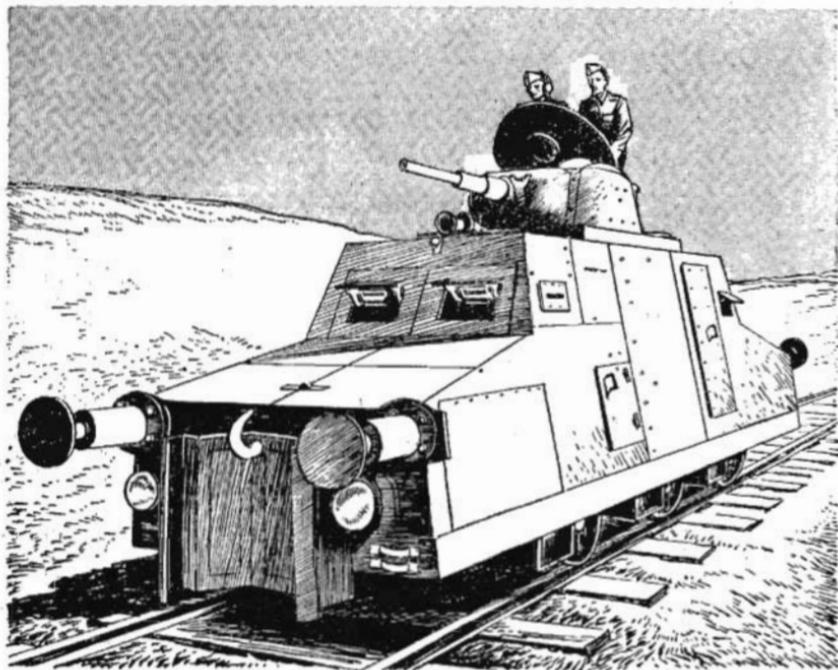


Figure 12.—German Railroad Patrol Car (armored).

liver fire from the railroad patrol car, and, equipped with rifles, machine pistols, and hand grenades, may leave the car to fight the hostile force. It is reported that sometimes the Germans also send supporting troops, who take up positions along the railroad embankment and give covering fire to the assault detachments, in cooperation with the heavy gun (37-mm

or 50-mm) of the "armored Zepp." Meanwhile, the assault detachment approaches the Russian demolition troops by bounds, and seeks to destroy them.

## 7. "WE CANNOT LOSE"

It is useful to know as much as possible, not only about the enemy's weapons and tactics, but about his mind and morale as well. On 6 December 1942 the following command order was issued to German troops in Libya; it illustrates clearly how the German Army tries to strengthen its soldiers' will to fight.

Now that we are no longer retreating, all unit commanders will place additional stress on discipline; on correct turn-out, with uniform caps worn in the regulation manner; and, above all, on military courtesy. Except when details are engaged in performing necessary fatigue, every minute of the training day should be utilized for drill. Also, unit commanders themselves will give instructive talks about the present political and military situation. These presentations will begin at once, and it will be emphasized to the troops that there is not the slightest reason for pessimism. The advantages of a shorter supply route and the importance of the Tunis bridgehead, which cuts off the enemy at the narrowest point of the Mediterranean, are to be explained to the troops with the help of a map.

The latest speech of the Führer should be quoted to show the troops that the war in Africa is only a small part of the German struggle for freedom and that, as the Führer has so clearly demonstrated, all advantages are, and always will be, on our side. Because we have all the factors of space, food supplies, raw materials, weapons, equipment, and manpower on our side, we cannot lose. We soldiers, who have an unshakable belief in final victory, should express this confidence and optimism in all our letters to the homeland. This will be the best news we can possibly send from the front.

## 8. RULES FOR LAYING TELLERMINES

The following extracts are from German Army regulations covering the laying of Tellermine fields:

The laying of Tellermines in open terrain will be influenced by the tactical purpose of the minefield, the nature of the terrain, the weather, the light conditions, the amount of time available, and the number of mines available.

Minefields are to be incorporated in the fire plan. Inasmuch as it is highly important that centers of resistance be established, it is advisable to lay several individual minefields, each having a narrow front and considerable depth, than to lay a continuous minefield of little depth.

Individual T-mine fields (company, platoon, and squad) are local minefields which, even under enemy action, are laid for a precise tactical purpose, according to the disposition of the company, platoon, or squad. As far as possible, they will be camouflaged. Unconcealed laying will be done only under exceptional circumstances—for example, when time is very limited or when there is an extreme shortage of manpower.

Continuous (as opposed to individual) T-mine fields are extensive fields, broken only by gaps and lanes for reconnaissance patrols, and are generally laid when hostile forces are not active. Continuous T-mine fields are always concealed and camouflaged.

The tactical situation and the supply of mines can modify the density of a minefield. This applies to camouflaged and uncamouflaged minefields, individual minefields, and continuous minefields.

## 9. NOTE ON CAPTURED MINES

All possible safety precautions should be observed in the handling, storage, and use of land mines captured from the enemy. It should be noted, especially, that German Tellermines stored in the open, where

direct sunlight and high temperatures can affect them, are likely to expand and burst. This results in exposure of the TNT with which they are filled. (See *Intelligence Bulletin* Vol. I, No. 12, pp. 8-14 for a discussion of German Tellermines, with sketches.)

#### 10. DEVICE FOR STRANDED FLYERS

It has been reported that certain German aircraft crews stranded in the Mediterranean area have worn an unusual openwork headgear of white webbing,

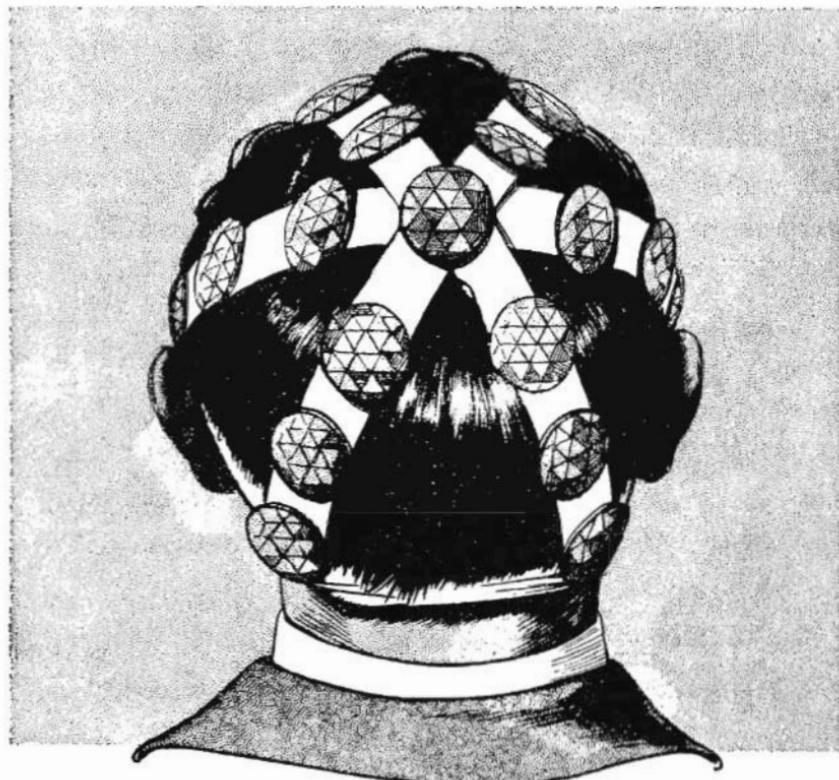


Figure 13.—German Device for Stranded Flyers.

which is stiffened internally with steel wire so that the device can be fitted over the head and held in position (see fig. 13). Nineteen glass reflectors, each cut with 24 facets, are sewn to the webbing. These facets are intended to catch the sun's rays and reflect them to aircraft known to be friendly or to friendly forces on higher terrain.

## PART THREE: UNITED NATIONS

### **Section I. LIVING IN THE JUNGLE<sup>1</sup>**

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#### **1. INTRODUCTION**

To become effective jungle fighters, soldiers should study the problems of living and getting about in the tropics. They must look upon the jungle as a friend—it is just that when understood.

Almost the only thing to be afraid of in the jungle, or any other wild country, is fear itself. A soldier should not be afraid for two good reasons. First, the chances are 100 to 1 that there is nothing to be afraid of, and, second, a man afraid and therefore in a state of partial panic is useless in any situation. If you are dropped in a tropical jungle, in an unknown forest, or in the desert, the most important thing of all is to keep your head and calmly think out the situation. Fear is the last thing that will help you.

Remember that many of the things you have read about in these out-of-the-way places were written by men who went there in a spirit of adventure, and who practically without exception have emphasized, if not

<sup>1</sup> This section is based on three separate reports, one of which was prepared by the Smithsonian Institution, Washington, D. C.; one by the Division of Wildlife Management, U. S. Department of Agriculture, and the other by a British authority on jungle craft in Burma.

See FM 31-20, *Jungle Warfare*, for U. S. doctrine on fighting in the jungle.

actually invented, many of the thrilling experiences they relate. Thrillers are often a matter of the author's state of mind and not based on actual circumstance.

Most Americans, especially those born and reared in cities, are far enough removed from their pioneer ancestors to have lost the knack of taking care of themselves under any and all conditions, and it would be foolish to say that, without any training, they would be in no danger if lost in the New Guinea or some other Pacific island jungle. On the other hand, they would be in just as great danger if lost in the mountains of Western Pennsylvania or in other regions of our own country. The only difference is that a man is less likely to become panicky when he is lost in his homeland than when he is lost abroad.

Tropical areas are about the safest places a man can find if he is to be dropped without supplies. Animals scamper away, and you may travel for months without seeing any of those sometimes called dangerous. In fact, it should be something of a thrill and a challenge to your ingenuity to undergo such an experience. Work your way out slowly. Keep rested and avoid fatigue.

## **2. CLIMATE**

The discomforts of tropical climates are frequently exaggerated. It is true that, on the whole, these climates are warmer than those in the temperate zones. The heat is more continual, or persistent, and, for this

reason, stories of excessively high temperatures have been circulated. In regions where the air contains a lot of moisture, the heat may seem more oppressive than it actually is. As a matter of fact, however, tropical travelers often complain that they have never experienced such heat and discomfort in the jungles as in some of our own cities in the summer time—Washington, D. C., for example. Also, strange as it may seem, there may be more suffering from cold in the tropics than from the heat. Of course, at ordinary altitudes, low temperatures do not occur, but chilly days and nights are common. At higher levels the nights may even be cold. The contrast between hot days and cold nights, however, is not as marked in forested areas as in the desert.

Rainfall in many parts of the tropics is much greater than that in all but a few areas of the temperate zones. Tropical downpours usually are followed by clear skies, and in most localities the rains conform to a fairly predictable time table. Except in a few areas where the fall may be continuous during the rainy season, there are not many days when the sun does not shine part of the time. Residents of the tropics usually plan their activities so that they are able to stay under shelter during the rainy and hot portions of the day. After becoming accustomed to it, most tropical dwellers prefer the mild and equable climate of the torrid zones to the frequent weather changes experienced in the more northerly climates.

In the jungles of Burma, the nights are cold enough from December to March to require a wool blanket

for cover while sleeping. A British jungle authority recommends that the sleeper pull part of the blanket over his head. This will induce deeper sleep, he says, and will have no harmful effects, since a person's blood does not require much oxygen while he is resting. A single blanket used in this manner will keep a soldier warmer than two used while his head is uncovered and while his lungs are inhaling lots of fresh air.

### 3. INSECTS

The harmful effects of tropical insects are generally overstressed. Malaria-carrying mosquitoes are by far the most harmful. It is fairly easy to contract malaria if a person fails to take the proper precautions. These include taking atabrine or quinine, wearing clothing that covers as much of the body as possible, using nets or screens at every opportunity, and avoiding the worst-infested areas when the tactical situation permits. Remember that mosquitoes generally fly in the afternoons and at night. They are most prevalent early at night and just before dawn. In uninhabited areas, malaria is much less likely to result from mosquito bites than in the populated places. Mud packs offer a certain amount of relief from the itching caused by mosquito bites.

Wasps and bees may be abundant in some places, but they will rarely attack unless you interfere with their nests. In case of stings, mud packs again are helpful. In some areas there are tiny bees, called sweatbees, which may collect on exposed parts of the

body in enormous numbers during dry weather, especially if one is sweating freely. They are stingless and, until one has completely stopped sweating, the only thing to do is to scrape them off with the hand, hundreds at a time. The honey made by these bees is not edible, as too much perspiration goes into its composition.

The larger centipedes and scorpions can inflict painful but not deadly stings. These creatures like dark places, so it is always advisable to shake your blankets before turning in at night, and to make sure before dressing that none are hidden in clothing or shoes. Spider bites may be painful but are rarely serious, and, as a matter of fact, are not often incurred. Ants are a possible source of danger to injured men lying on the ground and unable to move. This should be borne in mind in placing wounded where they may have to remain for some time.

In some localities certain butterflies collect to gather sweat from the human body in dry weather. They are somewhat annoying but quite harmless. In Indo-Chinese countries the rice-borer moth of the lowlands collects around lights in great numbers during certain seasons of the year. It is a small, plain-colored moth with a pair of tiny black spots on the wings. It should never be brushed off roughly, as the minutely barbed hairs of its body may be ground into the skin, causing a sore, much like a burn, that often takes weeks to heal.

#### 4. LEECHES

Leeches are common throughout most of the islands in the Southwest Pacific and the Malay Peninsula. They are found in swampy areas, streams, and moist jungle country. They are not poisonous, but their bites may cause infection if not cared for properly, and the small wound that they cause may provide a point of entry for the organisms which cause tropical ulcers or "jungle sores." One should watch for leeches on the body and brush them off before they have had time to bite. When they have taken hold, they should not be pulled off forcibly; make them release themselves by touching them with a moist piece of tobacco (this is especially effective if some red pepper is mixed in the tobacco), by touching them lightly with the burning end of a cigarette or a coal from the fire, or by dropping some alcohol on them. Leeches try to reach mucous membranes and frequently enter the rectum or penis without attracting attention until an itching sensation begins. Urination usually removes them immediately from the penis, but medical help may be needed to remove one from the rectum. However, after satisfying their hunger, leeches frequently leave the rectum during defecation. This may produce a certain amount of blood flow, which may be mistaken for the beginning of dysentery or piles, but its short duration will remove all fears on that score.

## 5. SNAKES

The dangers from snakes in the tropics have been very much overemphasized. A person in the jungle probably will not see more than one or two snakes a month—and when he does, the view will probably be fleeting, as the snake most likely will be making every effort to disappear. There are no land snakes in the more remote Polynesian islands, and there were none in Hawaii until a minute, wormlike blindsnake was accidentally introduced there in recent years. Most of the islands of the East Indies have both venomous and non-venomous types. There are four kinds of snakes on the Fiji Islands, including one venomous variety. There are many kinds on the Solomon Islands, and Australia has an abundance of them, but nearby New Zealand has none. Only harmless kinds occur in the Galápagos Islands.

The poisonous snakes in New Guinea and the large neighboring islands are relatives of the Indian cobra, and their venom affects the nervous system (in contrast to most North American poisonous snakes, whose venom affects the blood stream). If you should accidentally step on one, you probably would be bitten. The chances of this occurring to persons traveling along trails or waterways are probably about the same as the chances of being struck by lightning. A large party, composed of some 700 men, traversed a considerable area in New Guinea some years ago, and in a year's time none of them was bitten. New Guinea is as infested with poisonous snakes as any part of

Melanesia, but is probably a less dangerous area in this respect than New Mexico, Florida, or Texas, for example. This does not mean that one should be utterly careless about the possibility of snake bites, but ordinary precautions against them are sufficient. One should be particularly watchful when clearing ground for a camp site, trail, or the like, and also when roaming in the brush gathering firewood.

## **6. CROCODILES**

“Crocodile-infested rivers and swamps” is another catch phrase about the Tropics. New Guinea certainly has its share of crocodiles, but authentic cases of their attacking human beings are not very numerous. Large crocodiles, particularly a species inhabiting Southern Asia and some South Pacific islands are likely to attack a person unless proper precautions are taken. As a rule, crocodiles are more apt to attack a dog or a small child than a grown person. If you approach or attempt to kill one along the shore, you should take care to avoid the powerful sweep of its heavy tail, which can break a man’s leg. Crocodiles are able to move swiftly in a straight line on land, but they cannot cover a zigzag course at a fast pace. If a crocodile chases you, dodge about while you are making your escape.

## **7. WILD ANIMALS**

Jungle animals are by no means as dangerous as many writers of adventure stories would have us believe. In Africa, where lions, leopards, and such flesh-

eating beasts abound, it usually is necessary for photographers and others to obtain pictures of them on the large preserves, where the animals roam about as do the bears in Yellowstone National Park. In areas where the beasts are not protected, they are shy and seldom are seen—unless you have the aid of guides. When encountered, the one thought of the beast is to escape. All large animals, of course, can be dangerous if cornered, or suddenly startled at close quarters. This is especially true of females with young. The chances of this happening, however, are remote. The idea that big game hunting is dangerous is largely bunk. There are no carnivorous animals in the South Pacific, but in Sumatra, Bali, Borneo, and in Burma there are tigers, leopards, elephants, and buffalo. Ordinarily, these will not attack a man unless they are cornered or wounded.

## 8. POISONOUS VEGETATION<sup>2</sup>

Another category of fictitious dangers deals with poisonous plants and trees. The truth of the matter is that nettles, particularly tree nettles, are about the worst that one will encounter, and one stinging from this source is sufficient to educate the victim to a ready recognition of the plant. There are some trees, which the Malays call "ringas," the sap of which affects some people in much the same way as poison oak. Our own poison ivy and poison sumac, however, are much worse and much more likely to cause

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<sup>2</sup> In connection with vegetation, reference should be made to TM 10-420, *Emergency Food Plants and Poisonous Plants of the Islands of the Pacific*.

trouble. Danger from poisonous plants is much greater in Golden Gate Park, San Francisco, or in the woods of our own eastern seaboard, than it is in New Guinea or the tropics anywhere. Thorny thickets, such as rattan, should be avoided as one would avoid a blackberry patch.

## 9. NATIVES

New Guinea and the Solomon Islands are popularly believed to be the haunts of headhunters and cannibals. Fifty years ago this was true, and it is true today to a much lesser degree in certain areas. A considerable portion of the interior of Dutch New Guinea is occupied by hostile tribes that are likely to be dangerous to small parties. This is particularly true of the natives of the interior lake plain, who are armed only with bows and arrows and who are so excitable that they are likely to reveal intended ambushes by shouting or firing their arrows too soon. If attacked, a small force armed with modern weapons should be able to disperse them without serious difficulty. There still may be places in the interior of British New Guinea where the natives are treacherous, but for the most part these have been brought under control. Headhunting and cannibalism are usually practiced at the expense of traditional enemy tribes, although strangers occasionally may be attacked without provocation. Generally you can get along all right with natives by treating them as you would your friends back home. This involves respect for privacy and personal property, and observance of local customs

and taboos. One should not enter a native house without being invited, nor should fruits be picked or sago trees cut without the permission of their owners. If one is tempted by the women of the wild tribes (and not many soldiers are likely to be), a case of venereal disease can be expected as a follow-up—this is one of the “benefits” of civilization conferred by the whites. Any native may be dangerous if badly or unjustly treated, or if undue liberties are taken with native women without regard to local custom.

## 10. EQUIPMENT

Everyone who knows the jungle strongly recommends that equipment be as light as possible. A British authority says:

You will require a haversack to carry rations and various other necessary articles. Take with you a small luminous compass, a small flashlight, matches and a cigarette lighter, a very small alcohol burner (to be used only when a wood fire cannot be safely made), and any small, light articles you desire. Consider carrying a very light sheet of oiled silk or cloth if rain is expected.

These articles—plus your rifle, ammunition, and rations—will hardly weigh 20 pounds. The temptation to take more is likely to be strong. Resist it, because every pound over this weight becomes a burden on a long march.

Other aids are practicable under certain circumstances. A well-trained dog may be a most efficient sentry, and even a messenger to your base. Carrier pigeons are invaluable aids to scouting parties working far behind enemy lines—for example in directing our planes to enemy targets you may discover.

Goats are silent, active animals which will follow you through all sorts of country. Each goat is capable of carrying 10

pounds of supplies. As a last resort, these animals may be killed and eaten.

The bark of various trees can be split and used as rope or string. For the same purpose, many small vines and grasses can be used.

The bamboo "tree" can be used for a variety of purposes in the jungle, such as mats, rafts, and cooking utensils. To make a mat, cut a large bamboo "tree" into sections of the required length and split each section down one side. Cut out the partitions, make lengthwise cuts near the joints, and then beat each section flat. These mats also can be used for walls and floors of huts. (Remember that the sharp edges of bamboo "wood" can cut you like a knife.)

To make a bamboo water container, select a section of a bamboo "tree" and cut just below the lower joint and just above the upper joint. Then cut a hole in the upper part of the section, and rinse out any loose particles inside. A carrying handle can be made by peeling a strip of the outer bark on each side, from the base to a point about two-thirds up the container, and tying the ends together above the top joint. For cooking or boiling water, fill the container as desired and then plug the hole with leaves. The bamboo will not burn out until the water is boiled and the food cooked.

A "stick" of rice for carrying with you can be obtained by using a section of small, thin-walled bamboo to cook it. Cut the section of bamboo as described in the last paragraph, fill it with rice and water, and boil. The surplus water will evaporate, and the rice will swell to fill the entire cavity of the section. After it has cooled, the section may be split open. The boiled rice will emerge in a stick form, covered with an edible film of silvery-white inner skin from the bamboo. The rice can be carried in this state, or left in the bamboo for added protection.

A frame for drying meat can be made by erecting four bamboo stakes and connecting them with pieces of split bamboo, which are tied to the stakes.

## 11. WATER

Water should be boiled about 10 minutes or otherwise made safe from various disease germs unless you are absolutely certain as to the purity of its source. In this connection, reference should be made to *Intelligence Bulletin*, Vol. I, No. 9, page 66.

Water can be freed of salt by filtering it through soil. Polluted water in a lake or pond likewise can often be made safe to drink by digging a well close to the body of water. The fluid content in the stomachs of animals is safe, and, despite its taste, is a nutritious substitute for water.

Many plants have water stored in their stems and leaves; the fluid is easily obtained by cutting or breaking the stems and by chewing the leaves or other soft parts of the plant. Many natives use a vine which they call "water rope." Each foot of the vine, when cut, yields about a teacup full of water.

In the forests of Burma, water is easily obtained almost everywhere. Many of the streams, however, have typhoid or paratyphoid fever germs, despite the fact that they appear clear and pure. Except for flowing springs, no water in the Burma jungles should be considered safe until it is properly treated or boiled.

## 12. FOOD

Food of some type is always available in the jungle—in fact, there is hardly a place in the world where food cannot be secured from plants and animals. All animals, birds, reptiles, and many kinds of insects of

the jungle are edible. Some animals such as toads and salamanders, have glands on the skin which should be removed before their meat is eaten. Fruits, flowers, buds, and often tubers, leaves, and bark can be eaten. Fruits eaten by birds and monkeys usually are acceptable to man.

A group of officers and enlisted men several months ago tested the possibilities of "living off the land" of a Southwest Pacific island (New Hebrides) while making a four-day reconnaissance in the jungle. Although rations for three days were carried by each man, very little was touched except tea and biscuits. It was conclusively proved that men who are resourceful and who will take the time to learn a little jungle lore can easily live and thrive healthfully in jungle country.

The group found the following kinds of meats: Wild chicken, wild duck, wild pigeon, wild cattle, wild pig, flying fox, fish, eel, and fresh-water crawfish.

The following types of fruits were found: Bananas (all year round), oranges (May, June, July), lemons (May, June, July), bread fruit (February, March), wild raspberries (September, October), Nakarika (October, November), papaya (all year round), and mangoes (February, October).

Vegetables—found to be available throughout the year—were taro, yam, manioc, hearts of palm trees, and the hearts of pandanus.

Coconuts are found all during the year, and navele nuts during September and October.

Natives used two methods in cooking fish. In one instance the fish, after being cleaned, were wrapped in wild banana leaves. The bundle then was tied with string made from bark, placed on a hastily constructed wood griddle, and roasted thoroughly until done. The second method was to wrap the fish in the manner described above, place the bundle well down inside and underneath a pile of red-hot stones, and roast.

Some of the meat cooked by the experimenting group was roasted in a hollow section of bamboo, about 2 feet long. Meat thus cooked did not spoil for three or four days if left inside the bamboo stick and sealed up.

Yam, taro, manioc, and wild bananas were cooked in coals of fire. They tasted like potatoes—with a little stretch of the imagination. Hearts of palm made a refreshing salad, and papaya a delicious dessert.

In Burma, edible fruits and vegetables are not easily obtained, according to a British authority. Many fruits and vegetables are either not edible or are very bitter. Troops may find sweet potatoes or corn planted in a jungle clearing.

Meats in the Burma jungles may be obtained by killing such game birds as pea fowl, jungle fowl, pheasant, partridges, geese, and duck; and such animals as fish, deer, wild pigs, buffalo, and wild red ox. However, most of the latter do not move about much in open spaces during the day, are shy, and are therefore hard to kill. Buffalo and wild pigs, when wounded, may attack a person, and under some circumstances when not wounded at all.

### 13. SHELTER

Southwest Pacific natives have demonstrated how to construct a satisfactory bed and rain shelter in 15 minutes. The bed itself is made first, about 3 feet from the ground. Four forked stakes are driven into the ground, and a timber framework is placed upon the stakes. Then stout but pliable reeds are laid over the framework, and these, in turn, are covered with several layers of large, fine ferns. To construct the roof, four longer stakes are driven into the ground alongside the bed stakes, and the top is made in the same manner as the bed.

In Burma, the British warn against sleeping near a trail, game track, or stream, or on a ridge. These are jungle highways at night, and a tiger or other large animal might walk in on you. Go to the side of a hill away from game tracks, choose a dense thicket, make yourself comfortable, and rest without being mentally disturbed. The chances are very remote that anything will bother you.

The British also warn against sleeping in monasteries, or killing domestic cattle or chickens in front of the natives as it would offend Buddhist religious beliefs. Many monasteries have out-buildings for pilgrims or other travelers to use.

### 14. MAKING A FIRE

If you lose your matches or other fire-making devices, remember that a magnifying glass or any lens (including spectacles) will start fires by focusing sun

rays. The fine inner skin of dry bamboo is a good starting fuel.

Another quick method is to extract the bullet from a cartridge, replace it with a dry rag, cotton, or some other similar substance, and fire it onto the ground. The material used should catch fire and smolder.

If both these methods fail, you can always resort to the primitive practice of rubbing two pieces of wood together to fire a highly inflammable substance. Many primitive tribes have ingenious labor-saving gadgets to make fire by friction.

## 15. POINTERS ON OBSERVATION

The following notes on observation and reconnaissance were prepared by a British authority on the jungles of Burma.

Primarily, I would ask you to regard the ground on which you walk as the page of a book, or the page of a newspaper on which is written the news of all activities in and around the jungle. All movement of animals and men are marked by tracks and signs which you can interpret. Go out of your way to study the signs in soft ground, in the beds of streams, on roads and trails, and near watering places and salt-licks. Movement is seldom made without a reason; a few fresh tracks supply information about their maker, his direction, and probable intentions.

Animals fear men. Watch the animals, their tracks, and their behavior and you will learn the whereabouts of men. Listen to the cries of animals and learn to recognize their alarm calls.

A bird such as the lapwing, found in clearings near camps and villages, invariably gives away the movement of men by its loud and continuous cries.

## 16. MOVEMENT

In combat areas of the Burma jungle, it is best for an individual or small group to avoid the main road and trails and move through the forests. You will perhaps have a feeling of entering a maze. Don't let that disturb you. Consider that in these forests there are many animals as large or larger than yourself, and that they make and follow game trails, some of which are many years old. These game trails never run straight; they wind about and criss-cross the jungle; they lead to clearings, watering places, and salt-licks; and small ones may lead into larger ones, or merely vanish. Use these trails—don't strike across the jungle when there's a trail to assist you. The larger game trails follow the easiest terrain across hills, rivers, and swamps; and near these trails you will find opportunities to supplement your meat rations.

If no trails or paths are available, movement (in Burma) may be easier along drainage channels than along ridges. The reverse is generally true in other tropical areas.

## 17. MAINTAINING DIRECTION<sup>3</sup>

Only a few of us have had enough experience to attain a "sense of direction" which comes to us instinctively. We therefore must consider various aids. The compass is an obvious aid, but, in the jungle, the

<sup>3</sup> Reference should be made to the section on "Maintaining Direction" in *Intelligence Bulletin*, Vol. I, No. 4, page 69.

inexperienced man would never be able to move very fast if he had to make constant reference to his compass. It should be used as a last resort and as a check.

The shadows thrown by the sun are an easily observed and accurate aid to direction; but one must allow for the gradual displacement of shadows as the earth moves around.

Other aids to maintaining direction include prominent objects, the course of rivers, prevailing winds, the stars, and the moon.

## **Section II. BRITISH USE OF TANKS IN JUNGLE WARFARE**

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### **1. INTRODUCTION**

Tactics evolved by a British Army unit in India for the use of tanks in jungle warfare are given below. This information, published as a training memorandum several months ago, represented the thought of the British unit at that time, and it should not be regarded as the latest official British doctrine. The use of this document is felt to be timely since it may stimulate expression of U. S. opinion on the subject.

The memorandum emphasizes that tank, artillery, infantry, and engineer troops should train together to develop teamwork, confidence, and understanding. In jungle warfare, the British unit felt that large numbers of tanks will seldom be able to deploy sufficiently to develop their full fire power, and much of their work will be done in close cooperation with the infantry. It must be realized that, in the jungle, tank movements are largely confined to roads or trails.

### **2. THE MEMORANDUM**

#### **a. The Approach**

During the approach march, most of the tank strength should move in a close, compact group, some distance back of the for-

ward troops. One tank platoon (four tanks) should move near the head of the troop column so it can cooperate immediately with the leading infantry soldiers in case of contact with the enemy. (The four tanks are considered the maximum number that should be deployed on the initial contact.) Tanks should not lead the column; they are too easily held up by demolitions and obstacles that they cannot by-pass without engineer assistance. In more open country, where they can deploy, tanks should lead, preceded by their own reconnaissance unit. Not less than a company must be employed for reconnaissance, and it should be followed closely by at least one company of infantry.

### b. Attack

In the frontal attack, in thick jungle, it is unlikely that the tanks will be able to leave roads or trails; therefore not more than one platoon will be used in the attack itself, although more should be available and ready to exploit success. The actual method of attack is governed by the amount of fire support available. If it is considered sufficient to neutralize enemy antitank fire, tanks can slightly precede the bulk of the infantry, which, however, should follow closely. Where less fire support is available, the arrival of the tanks on the objective should be timed to coincide with that of the infantry. In either case some infantry should advance on either flank level with the leading tanks to prevent enemy tank-hunting parties—which may have survived the artillery barrage—from attacking the tanks with grenades or other similar weapons. In addition to the barrage and the close escort of infantry, it will often be necessary for tanks to cover their advance with smoke from their own projectors, or, if these are not fitted, from mortars.

This form of attack requires very careful timing and must be practiced as a drill by all infantry, inasmuch as the motor battalions in armored regiments cannot put sufficient men on

the ground to deal with a strongly held position. Artillery and engineers must also know their exact roles in this operation; the former can often use a tank as an observation post. In the encircling attack, in thick jungle, tanks will assist in exploitation, once the road (or roads) is cleared. In either form of attack, the mere presence of tanks is of great morale value to the infantry.

In the more open spaces in jungle country, the primary role of tanks is to deal with any hostile armored-force vehicles that are encountered; the tanks should not be dispersed for reconnaissance missions that can be performed by the motor-battalion carriers or their own armored-car patrols. If tanks are required to take part in an attack on enemy positions in the open, only the heavier types should be used, unless fire support is overwhelming and unless it is reasonably certain that enemy anti-tank weapons have been neutralized. Infantry troops can often be transported on the tanks to within reach of the objective if it is not possible for them to get there in their own vehicles. When woods, gullies, and other cover are being cleared, tanks will operate on the flanks and rear in order to deal with any enemy driven into the open. In village fighting, tanks should move in support of the attacking infantry and must also be used to watch all exits. They must never be sent into villages, unless preceded by infantry. If required to assist or take the place of artillery in providing fire support for an attack on a village, tanks should use high-explosive and not armor-piercing projectiles.

### c. Defense

Where the terrain is suitable, tanks should always form part of the striking force from defended areas. If time allows, clearings should be made and trails improved for the use of tanks in this role. If not employed in this role, tanks should be held in reserve for counterattacks.

**d. Withdrawal**

In thick jungle, tanks can do little or nothing to hold up the enemy, but in more open country they can impose considerable delay, either by counterattacking or by threatening the head of his column. In this way they can help our retiring troops to break off contact, and, in an emergency, tanks can ferry out the rearmost parties of infantry. Enough tanks must be employed to watch both flanks, and, if carriers are not available, a proportion must be used to keep open the roads to the rear.

"In the hands of junior officers lies the fate of an Army. You are in direct, immediate command of the troops. You are their inspiration and leaders. All of you are fighting for the right to live as you please as long as you don't get unjustly in other people's hair. You are fighting against dictation and dictators. Only discipline will win a war. Victories come from discipline. And discipline comes from the everlasting efforts of the junior officers."

—Gen. Dwight D. Eisenhower.

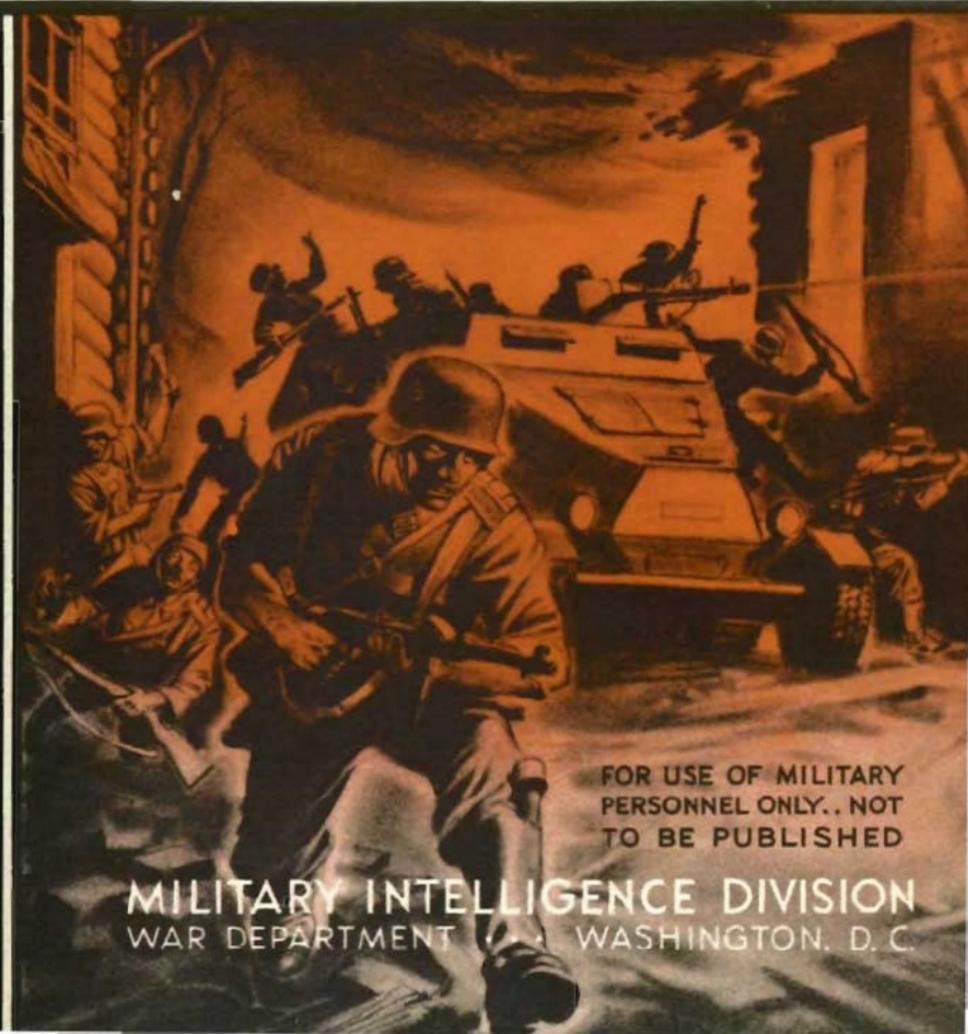


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# INTELLIGENCE BULLETIN



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WAR DEPARTMENT . . . WASHINGTON, D. C.

# **Intelligence Bulletin**

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War Department

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## TABLE OF CONTENTS

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### PART ONE: GERMANY

	Page
SECTION I. NEW SELF-PROPELLED GUN-----	1
II. NOTES ON WINTER USE OF INFANTRY WEAPONS-----	5
1. Introduction-----	5
2. Use of Infantry Weapons in Winter-----	5
a. General-----	5
b. Specific-----	6
III. IMPROVEMENT OF DEFENSIVE POSITIONS-----	12
1. Forward Boundary of the Organized Defense Area-----	12
a. Requirements-----	12
b. How to Fulfill the Requirements-----	13
2. Depth of the Defensive Position-----	14
a. How Depth of the Position Is Achieved-----	14
b. How Defense of the Position Is Insured-----	14
3. Maps or Overlays-----	15
IV. ROAD DISCIPLINE; ACTION BY ALL ARMS AGAINST PLANES-----	16
1. Introduction-----	16
2. Specific Dispersal Regulations-----	17
3. All Arms vs. Hostile Aircraft-----	18
a. General-----	18
b. Self-protection-----	18
c. Standard Procedure for Firing-----	19
d. Rifle Fire against Low-flying Aircraft-----	20
V. STREET FIGHTING BY PANZER GRENADIERS-----	21
VI. THE GERMANS IN COMBAT—AS SEEN BY THE BRITISH-----	24
VII. MISCELLANEOUS-----	30
1. Tactical Employment of AT Weapons-----	30
2. "English Spoken Here"-----	30
3. Smoke Generators on Tanks-----	31
4. Booby Traps-----	32

## TABLE OF CONTENTS

<b>PART TWO: JAPAN</b>		<b>Page</b>
<b>SECTION I. COMBINED ATTU REPORTS ON JAPANESE WARFARE</b>		33
1. Introduction		33
2. Individual Characteristics		33
3. Defensive Positions		35
a. General		35
b. Machine Guns		36
c. Sniper and Observation Posts		37
4. Defensive Tactics		37
a. General		37
b. Machine Guns		38
c. Use of Bayonets		39
d. Communication		39
5. Camouflage		39
a. General		39
b. Natural Material		40
c. Rope		40
d. Wearing Apparel		41
e. Installations		42
f. Dummy Emplacements		43
6. Developments in Weapons		43
a. "Barrage" Mortar		44
b. Hand Grenades		48
c. Grenade Dischargers		48
7. Notes on Equipment		49
a. For the Individual Soldier		49
b. Wearing Apparel		50
<b>II. NOTES ON THE JAPANESE—FROM THEIR DOCUMENTS</b>		52
1. Introduction		52
2. The Documents		52
a. General Comments		52
b. Reconnaissance		53
c. Advancing in Jungle		54
d. Assault Tactics		55
e. Pursuit		55
f. Antitank Tactics		56
g. Antiaircraft Tactics		56
h. Night Combat		57
i. Precautions with Ammunition		57
j. 6.5-mm Ball Ammunition		59
k. Use of Captured Supplies		59
l. Treatment of Prisoners (Singapore)		60

## TABLE OF CONTENTS

v

	Page
<b>SECTION III. NOTES BY U. S. OBSERVERS ON JAPANESE WARFARE</b>	<b>61</b>
1. Introduction-----	61
2. Personnel-----	61
3. Tactics-----	62
a. General-----	62
b. Defensive Positions-----	63
c. Scouting and Patrolling-----	63
d. Use of Bayonets-----	64
e. Use of Grenades-----	65
f. Ruses-----	65
g. Snipers-----	65
h. Communications-----	66
i. Recovering the Dead-----	66
<b>IV. ENEMY COMBAT NOTES ON USE OF MGs, AT RIFLES</b>	<b>67</b>
1. Introduction-----	67
2. The Notes-----	68
a. General-----	68
b. Section Combat-----	68
c. Platoon Combat-----	68
d. Company Combat-----	70
<b>V. SOUVENIR HUNTERS CAUSE NEEDLESS LOSS OF LIVES</b>	<b>72</b>

## LIST OF ILLUSTRATIONS

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<b>FIGURE 1. New Heavy German Self-propelled Gun-----</b>	<b>2</b>
<b>FIGURE 2. "Snow Board" Used as a Base for German Light Machine Gun in Firing Position-----</b>	<b>7</b>
<b>FIGURE 3. Pulk Used for Winter Transport of German Heavy Machine Gun-----</b>	<b>8</b>
<b>FIGURE 4. British Portable Device for Map Reading at Night-----</b>	<b>26</b>
<b>FIGURE 5. British and German Patrol Activity-----</b>	<b>27</b>
<b>FIGURE 6. Japanese "Barrage" Mortar-----</b>	<b>44</b>
<b>FIGURE 7. Shell for Japanese "Barrage" Mortar-----</b>	<b>45</b>

## PART ONE: GERMANY<sup>1</sup>

### Section I. NEW SELF-PROPELLED GUN

---

In Russia the Germans are using a new armored self-propelled gun, which bears at least an outward resemblance to the Pz. Kw. 6, the German tank often referred to as the "Tiger."<sup>2</sup> The new self-propelled gun (see fig. 3) mounts an 88-mm cannon in a fixed turret, and has an over-all weight of 70 tons. Its maximum speed is reported to be not more than 12 miles per hour.

Although the armor of the new weapon, especially the front armor, is said to be harder to pierce than that of the Pz. Kw. 6, the Russians have found the former easier to set afire. They have nicknamed it the "Ferdinand."

A Russian staff officer makes the following observations regarding the performance of the "Ferdinand" on the Orel and Belgorod fronts, where the Germans, counterattacking, used a number of the new heavy weapons and Pz. Kw. 6's as battering rams in an attempt to force breaches in the Russian lines.

<sup>1</sup> In *Intelligence Bulletin*, Vol. I, No. 12, p. 13, footnote 2 should read "Schrapnellmine—shrapnel mine." This is the full name for the German "S" mine, widely known to U. S. soldiers as the "bouncing baby."

<sup>2</sup> For a discussion of the Pz. Kw. 6, with illustrations, see *Intelligence Bulletin*, Vol. I, No. 10, pp. 19-23.

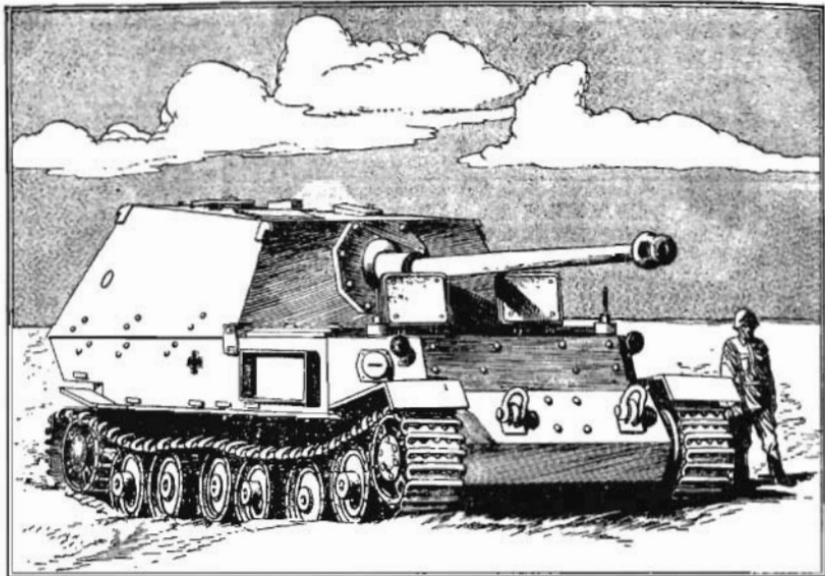


Figure 1a.—New German Heavy Self-propelled Gun (front view).

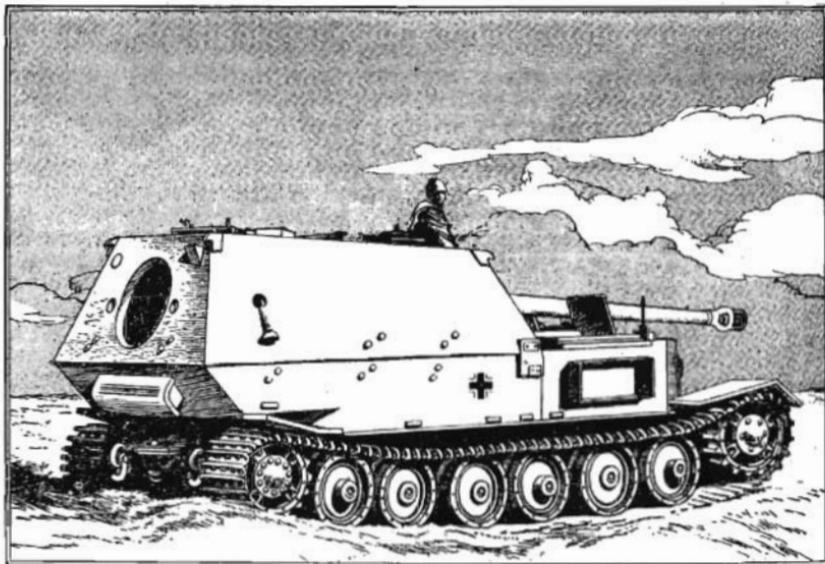


Figure 1b.—New German Heavy Self-propelled Gun (side and rear view).

During one battle the enemy assaulted our positions with 300 heavily armored vehicles, among which were about 50 "Tigers" and "Ferdinands." While the battle was taking place along our forward positions, 12 of our own heavy self-propelled guns remained hidden in their earth fortifications. When about 20 "Tigers" and "Ferdinands" broke through our forward lines, our self-propelled artillery moved out from their concealed positions in order to fire by direct laying. An ambush was prepared near the threatened area, and the pieces were camouflaged.

Fire against the German armor was commenced when the attacking vehicles were about 500 yards away from our cannon.

Our first rounds were successful. At 500 yards "Tigers" suffered gaping holes in their turret armor and side armor. At 300 yards we pierced their frontal armor, and blew their turrets clean off. Hits on the side armor at this range nearly split the vehicles in half. It was somewhat different with the "Ferdinands." Their armor—the front armor, in particular—was more difficult to pierce, but their tracks, suspension, and side and turret armor were no harder to damage and destroy than those of the "Tigers." The Germans lost a total of 12 "Tigers" and six "Ferdinands."

In another battle the same heavy armor of the enemy was engaged by our ordinary medium artillery, which used both special and regular ammunition. Three of our pieces were emplaced to form a triangle; they were reasonably far apart. This triangular disposition permitted unusually effective fire against "Ferdinands." Although the "Ferdinand's" fire is very accurate, its fixed turret does not permit it to shift its fire rapidly. When the gun is caught in a triangle, it is virtually helpless, because while it engages one cannon the other two take pot-shots at its vulnerable points. If the piece directly in front of a "Ferdinand" does not disclose its position by firing, the other two can usually dispose of the big gun with no loss to ourselves.

Obviously, it is not always possible for us to arrange a battery in a triangle. Therefore, we require the closest possible coopera-

tion between the pieces of a battery and also between neighboring batteries.

Point-blank fire from our medium tanks in ambush, armed only with the 45-mm cannon, has taken care of many "Tigers" and "Ferdinands," as have land mines, Molotov cocktails, and cannon fire from our fighter planes.

It is also reported that the circular hole in the rear of the "Ferdinand's" fighting compartment is extremely vulnerable. This hole provides room for the recoil and the ejection of shells. Russian observers state that grenades or Molotov cocktails thrown into this opening can put the vehicle out of action.

Note: As the *Intelligence Bulletin* goes to press, further information regarding the "Ferdinand" has been made available.

It is reported that the crews consist of six men: A gun commander (usually a lieutenant, who is either a tank man or an artilleryman), a gunner, a driver-mechanic, a radio operator, and two additional gun crew members.

"Ferdinands" are organized in battalions called "Heavy Tank-Destroyer Battalions." Each battalion consists of three gun companies, a headquarters company, a repair company, and a transport column. Each gun company consists of three platoons of four guns each. The company headquarters has three guns, making a total of 14 guns per company. The battalion headquarters company has two guns, a Pz. Kw. 3, and four motorcycles.

On the offensive, the battalion moves in two echelons. The first echelon consists of two companies abreast, with each company in line and with a 100-yard interval between guns. The second echelon consists of the third company, also in line. The distance between echelons has not been reported.

Although the gun itself is excellent, the mounting has certain pronounced defects. (1) The gun can fire only to the front, and is effective only when stationary. (2) Poor vision from the fighting compartment allows more maneuverable tanks and antitank weapons to get in close to the gun.

## **Section II. NOTES ON WINTER USE OF INFANTRY WEAPONS**

---

### **1. INTRODUCTION**

The following notes are based on directions issued by the German High Command regarding the use of German infantry weapons in winter. For complete descriptions of these weapons, with illustrations, the reader is referred to Special Series No. 14, "German Infantry Weapons," issued by M. I. D., W. D.

### **2. USE OF INFANTRY WEAPONS IN WINTER**

#### **a. General**

The German Army is thoroughly aware that winter cold and snow necessitate special measures concerning the carrying, moving, and bringing into position of infantry weapons and ammunition. In this connection German soldiers are reminded of certain fundamental points: that noises travel farther in cold, clear air; that when snow obscures terrain features, there are decidedly fewer landmarks; and that, in winter, distances are generally estimated too short in clear weather and too far in mist. The German High Command adds several other practical suggestions:

It will be especially necessary to practice target designation, distance estimation, and ranging.

The rifleman and his weapons must be camouflaged thoroughly. White coats, white covers for headgear, and white overall trousers and jackets will be worn. When necessary, such outer clothing can easily be improvised out of white canvas. The simplest camouflage for weapons will be plain white cloth covers or coats of removable chalk; the former will have the added advantage of affording protection.

At low temperatures, the accompanying weapons of the infantry will fire somewhat short at first. After a few rounds, however, the range to the point of impact will be normal. Before a weapon is loaded, the loading movements should be practiced without ammunition. (In drilling with pistols, be sure to remove the magazine beforehand.)

### b. Specific

(1) *Rifles*.—Rifles are carried on the back, or are hung from the neck and suspended in front. During long marches on skis, rifles are fastened on the side of the haversack.

When the German soldier goes into position, he takes special care not to allow his rifle barrel to become filled with snow. He does not take off the bolt protector and muzzle cap until shortly before he is to use the rifle. The various methods of going into position are practiced in drill.

As far as possible, telescopic sights are not exposed too suddenly to extreme changes in temperature.

(2) *Automatic Pistol*.—The Germans keep the automatic pistol well wrapped, and sling it around the neck or over the shoulder. Magazine pouches are closed very tightly.

(3) *Light Machine Gun.*—The light machine gun is slung on the back. In going into position, the Germans use brushwood or a “snow board” (see fig. 2) for a base. They take care not to disturb, by unnecessary trampling, the snow cover in front of positions. The purpose of this precaution is to avoid recognition by the opposing force.

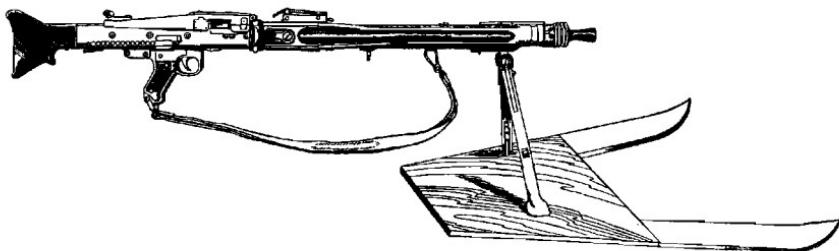


Figure 2.—“Snow Board” Used as a Base for German Light Machine Gun in Firing Position.

The simplest kind of mat is taken along so that belts can be kept clear of snow.

The light machine gun is first shot until it is warm, and then is oiled.

When fire is continued for any length of time, the snow in front of the muzzle turns black; therefore, before the snow becomes blackened, the Germans decide upon prospective changes of position.

If there is to be a considerable interval after the firing of the machine gun, the bolt is changed and the oil is removed from the sliding parts. (Only an extremely thin oil film is allowed to remain.) This precludes stoppages which might be caused by the freezing of oil. The new bolt is given a very thin coat of oil before it is inserted.

Replacement ammunition, in pre-filled belts, is carried into action.

(4) *Heavy Machine Gun.*—The heavy machine gun is carried in the usual manner or is loaded on a small sleigh, skis, or a pulk. A pulk (see fig. 3) is a type of sled used by the Lapps; its front half somewhat resembles that of a rowboat.

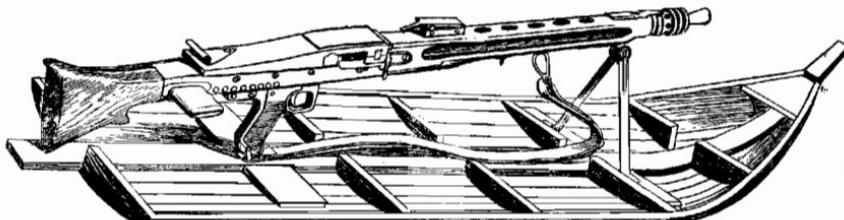


Figure 3.—Pulk Used for Winter Transport of German Heavy Machine Gun.

When the Germans take the heavy machine gun into position, they use some sort of snow board, the pulk, or even a stretcher as a base. They take care not to disturb the snow in front of the position.

The Germans try not to expose the sights to temperatures of less than 6° F. During marches these sights are kept in their containers, and before they are used, they are gradually warmed in sheltered places or on the human body. The sights are kept mounted on the machine-gun carriage only while the gun is in active use.

Mats are carried so that belts may be kept clear of snow.

For shooting in extreme cold, German range tables provide for the necessary sight adjustments. The

heavy machine gun is first shot until it is warm, and then is oiled. New positions are decided upon before the snow in front of the muzzle becomes blackened.

The Germans prevent soiling of the machine gun, which leads to stoppages, (*a*) by keeping the antidust cover closed as much as possible, and (*b*) by not allowing the gun to remain loaded (with bolt backwards) for any length of time.

Speed is considered highly important in readying the gun for firing. While firing is in progress, the bolt remains uncocked in the forward position, the belt is inserted into the belt pawl, and the gunner, remaining in the firing position, withdraws the cocking slide only with a strong jerk and pushes it forward again.

(5) *General Rules for Firing the Mortar and Infantry Howitzers.*—Adjustment of fire is done only by very careful bracketing.

At low temperatures, the weapons fire somewhat short at first. After a few rounds the range to the point of impact becomes normal. Therefore, in adjustment of fire, the Germans start with a greater range than that ascertained.

When shooting from the same emplacement for any length of time, the Germans repeatedly throw fresh snow over the black spots in front of the muzzle to camouflage them.

(6) *Light Mortar.*—The light mortar is carried in the usual manner. In emplacing it, the Germans clear away the snow and dig into the ground. If the snow

is loose enough, the Germans fill sandbags with it or pack it down to form bases.

The Germans have found that the fragmentation effect of the mortar shells is diminished by deep snow.

Sights are wrapped in wool as a protection against extreme cold.

(7) *Light Infantry Howitzer*.—The light infantry howitzer is moved by spur wheel (horse-drawn) or on a simple sleigh, drawn by two horses or six men. When half-tracks or tractors are used, sled runners are placed under the front wheels.

When the ground is frozen solid, the guns in firing position are put on elastic bases whenever this is feasible. Brushwood fascines (bundles) are considered especially satisfactory. When the Germans are firing in deep snow, they use sled runners and snow plates or boards, or the largest commercially-produced snowshoes, to prevent the guns from sinking in. If one pair of snowshoes is not enough, two pairs are fastened together.

Since the march is generally confined to roads or trails, emplacements are usually set up in the route itself.

The Germans try to fire ricochet bursts. This is possible if there is loose snow (up to about 16 inches in depth) and frozen ground.

Sights are protected against extreme cold.

(8) *Heavy Infantry Howitzer*.—Movement in 6 to 8 inches of snow is not difficult on roads and trails.

For the rest, see (6) and (7).

(9) *37-mm Antitank Gun.*—In 6 to 8 inches of snow, the 37-mm antitank gun is drawn by a light five-passenger personnel carrier. When the gun is man-handled or horse-drawn, the Germans use a spur wheel and sled runners fixed underneath.

The emplacement is prepared in the same manner as that of the light infantry howitzer.

The front of the protective shield is painted white. When the gun is in the firing position, a cut-out board is placed underneath the trail.

To avoid blackening the snow with the first round, the weapon is not fired too low over snow cover.

(10) *50-mm Antitank Gun.*—In 6 to 8 inches of snow, the 50-mm antitank gun is drawn by a half-track prime mover on roads and trails only.

For the rest, see (9).

## **SECTION III. IMPROVEMENT OF DEFENSIVE POSITIONS**

---

Last February Col. Gen. Jurgen von Arnim, then in command of the Fifth Panzer Army, issued from his headquarters in Tunis a significant order regarding the improvement of German defensive positions. This order not only touched on certain German weaknesses in the defense, but, in laying down methods by which they were to be corrected, showed a practical application of German doctrine to actual field problems.

At the beginning of the order, von Arnim said, "The improvement of positions still remains far below minimum requirements." He declared that temporary improvement of a position was not enough, and ordered that all defensive works be sited and built up (1) in anticipation of large-scale fighting, and (2) to provide concealment from hostile artillery and air observation. To insure uniform interpretation of his instructions, von Arnim summarized them in the following outline.

### **1. FORWARD BOUNDARY OF THE ORGANIZED DEFENSE AREA**

#### **a. Requirements**

- (1) The forward boundary of the organized defense area must enclose the various positions which will be decisive in the defense of the combat outpost area.

- (2) It must protect the most important observation posts.
- (3) It (the terrain at that point) should be as unfavorable as possible to hostile tanks seeking to reach the position.
- (4) It must remain in the hands of the defenders at all times.

### **b. How To Fulfill the Requirements**

(1) The main dispositions should not be placed too near the forward boundary, lest hostile artillery fire reach them too easily. The majority of the automatic weapons should be forward. The riflemen should be behind them—removed from direct hostile fire and ready to counterattack. [See paragraph 2a (2) of this section.]

(2) The forward boundary of the organized defense area will be defended chiefly by fire from flank positions, which in turn are concealed from the hostile line and which will be protected by hand-grenade action against any frontal assault. Barbed wire is to be placed so far forward that a well dug-in enemy to the front cannot get within hand-grenade range of our foxholes.

(3) The selection of observation posts is decisive. These must have a field of observation which includes not only the forward boundary of the organized defense area, but the hostile outpost area, as well. These observation posts are not to be occupied initially; they will be occupied only at the start of a major action.

(4) Even if the hostile force does not at first place fire on our important positions, this is by no means an indication that it has not discovered them and will not concentrate on them at the beginning of the attack. Therefore, exercise caution when approaching the position, and especially within the position itself.

(5) Foot paths often reveal to hostile air observers an otherwise well camouflaged position (observation posts, command posts, field aid stations, and so on).

(6) Complete defense against hostile tanks must be insured by the prepared and coordinated employment of all means at our disposal: by mines (where antitank guns cannot be employed);

by antitank guns (where concealed gun positions and a good field of fire of 0-1000 yards are possible); and by artillery.

(7) The reinforced defensive positions should consist of a deep, narrow hole for every two men. Stone walls will not be used.

## 2. DEPTH OF THE DEFENSIVE POSITION

### a. How Depth of the Position Is Achieved

A defensive position in depth is achieved by:

(1) All-around defense of all observation posts and of all platoon, company, battalion, and regimental command posts.

(2) The construction of defensive positions in the areas of units designated for the counterattack. See paragraph 1b (1). Consider the reserves on the unit boundaries.

(3) All-around defense of all firing positions (heavy machine guns, mortars, infantry howitzers, and artillery).

### b. How Defense of the Position Is Insured

Defense of the position is insured by:

(1) Our ability to shift the fires of our heavy weapons and employ them against the hostile force after it has penetrated our lines, and our ability to lay down defensive fires in front of our own centers of resistance. This must be taken into account in the selection of observation posts and firing points.

(2) Communication with subordinate and higher units, and with command posts on the right and left as well as with forward outposts. The system of communication (telephonic or visual) must be so planned or improved that there will always be at least one means of communication functioning, even under heavy hostile fire. These communications are to be tested immediately and continuously improved, so that weaknesses can be determined and remedied.

(3) Security of the approach roads (concealed from the opposition), which may be used by the reserves in advancing to areas of counterattack against hostile penetrations. As soon as the opposition begins to lay down preparatory fires, these roads and

the projected assembly areas of the reserves must be inspected daily to make certain that they are situated in areas which are exposed to little or no hostile fire.

(4) The supply of the sectors and subsectors, each according to the capabilities of the established strong points, with ammunition, water, first-aid equipment, tobacco, and food. It must be insured that, even when there is a complete one-day failure of supply from rear to front, the defenders of strong points will remain in good fighting condition. In the event of an enemy penetration, the strong points which have not yet been surrounded are to be immediately supplied with ammunition from the still-unbroken front. Upon their ability to hold out depends the successful continuation of the battle and the rapid retaking of the lost parts of the organized defense area.

(5) The simultaneous cooperation of all supporting weapons against definite targets. Whenever the occasion permits, test firing will be conducted by the artillery and sector commanders. One round will be fired from each position upon a given command or at a definite time.

### **3. MAPS OR OVERLAYS**

Maps or overlays will be made by regiments and higher units to indicate the following:

*a.* Minefields, including antitank-gun positions and effective fields of fire.

*b.* Command posts and observation posts (with the types of communication between them shown in color).

*c.* Especially advantageous observation posts (shown in different colors, with the terrain visible from each post always in the same color as the post itself).

*d.* Supply dumps (with munitions, water, and so on in different colors).

*e.* The positions of artillery, infantry guns, and mortars, including the fields of fire.

*f.* The principal areas in which hostile artillery fire will fall (shown on overlays).

## **Section IV. ROAD DISCIPLINE; ACTION BY ALL ARMS VS. PLANES**

---

### **1. INTRODUCTION**

The relation between the Germans' faulty road discipline and effective attacks on their columns by United Nations aircraft is thoroughly apparent to the German High Command. For some time the German Army has been attempting to remedy the unsatisfactory dispersion of its columns, both on the march and at halts. Also, as a natural corollary, it has been insisting on a vigorous defense against attacking aircraft by weapons of all arms. That German traffic posts and patrols in Tunisia allowed units to expose themselves needlessly was indicated by Field Marshal Rommel in January 1943, when he wrote the following order, which sharply expresses his opinion on this subject.

I personally have observed a considerable lack of traffic discipline, especially along the Via Balbia. I request the commanding generals, as well as the commanding officers of independent units, to remind their units again of the necessity for absolute compliance with traffic discipline.

Especially, I do not wish to see any columns halting or resting on the roads. Roads must under all circumstances be kept clear during any halt. This applies even to single vehicles. A congregation of motorized troops on roads is simply an impossible condition. Such an assembly must always be off the road, and the vehicles dispersed.

Those who disregard this order—or the forthcoming regulations for traffic discipline—will be very severely punished. I assure you that I will punish any violation that I may happen to see, insofar as it concerns members of the German Armed Forces.

## 2. SPECIFIC DISPERSAL REGULATIONS

The vulnerability of thickly clustered vehicles and tents was stressed by General von Arnim in April 1943, when he issued specific regulations designed to insure better dispersion and to reduce the casualties caused by United Nations aircraft. The von Arnim order, which follows, makes it clear that the German forces in North Africa had not been carrying out Marshal Rommel's instructions any too faithfully.

On my flights over the new positions today, I saw unbelievable sights, not only there, but stretching far to the rear. Vehicles and tents were huddled together in very small spaces, such as small woods, narrow draws and wadis, and so on. This inevitably increases the heavy casualties inflicted by hostile aircraft.

I order:

1. Tents must be 100 yards apart.
2. Vehicles must be parked away from a road, and must be 50 yards apart.
3. Only one vehicle may be parked near a house, and then only on the shady side.
4. When vehicles are obliged to halt briefly on a road, a distance of 30 feet between vehicles will be scrupulously maintained.
5. If vehicles parked on the side of a road overlap any part of the road itself, no further parking will be allowed, and no vehicles will be parked on the opposite side of the road.
6. When a motor convoy is parked, a traffic post must be established 30 yards ahead of the column, and another traffic post must be established 30 yards to the rear of the column.
7. Columns must not stop on bridges, on curves, or in towns; single vehicles may park on side streets in towns, but not on a main highway.

I require that all traffic posts and patrols be especially vigilant in carrying out the above regulations.

### 3. ALL ARMS VS. HOSTILE AIRCRAFT

#### a. General

Logical sequels to the foregoing orders regarding road discipline are the German Army memoranda reminding all arms that, once they are properly dispersed, they must use every means at their disposal to defend against attacks by hostile aircraft, and that even the infantry rifleman must be prepared to deliver fire against low-flying planes. The extracts which follow have been taken from several German Army memoranda, but have been rearranged for easier reference, under the headings "Self-protection," "Standard Procedure for Firing," and "Rifle Fire against Low-flying Aircraft."

#### b. Self-protection

(1) The activity of the opposing air units is directed against all the resources of the German Armed Forces. It is therefore the duty of all soldiers of all arms to combat hostile planes.

(2) Hostile aircraft can attack only when they can see you, your weapon, your vehicle, or your tent. Avoid being detected from the air. The best way to keep from being seen is to blend yourself with the natural surroundings—in other words, remember the value of camouflage.

(3) Incomplete camouflage is better than none. But bad camouflage—that is, employing contrasting colors or creating telltale shadows—is much more dangerous than no camouflage at all. Shadows and contrasting colors are the first things that attract the attention of aircraft.

Camouflage must be changed continually, in accordance with the surroundings, the weather, and even the time of day. Moreover, the individual is responsible not only for himself, but for

cooperating with his fellow soldiers to maintain perfect camouflage.

(4) On marches, at halts, in rest areas, while alerted, when attacking, or when defending—the leader must remember to keep his units deployed, to disperse columns and marching groups, and to maintain a proper distance between groups, as well as dispersal to the flanks. The preparation of gun emplacements for heavy weapons, as well as the work of readying assault guns, tanks, and other vehicles for combat, must be carried out near woods, groves, or orchards, beside haystacks, in town alleys or gardens, or wherever the surroundings suggest a practical camouflage plan.

(5) Marches and other movements, even those of small units, should be executed at night as much as possible. Do not permit crowds to form. Never permit halts at crossroads, squares, or narrow places. Maintain strict blackout discipline. If the opposition releases flares, stop marching, halt all vehicles, and hold draft and pack animals—allow nothing whatever to move.

(6) Bombing and strafing by hostile planes cannot be successful if you have dug adequate cover against fragmentation. This goes for you, your weapon, and your vehicle. Remember to dig foxholes when you are engaged in tactical situations—even when you are in transit, and your halt for work or rest is temporary. Never dig a foxhole beneath any vehicle other than a tank.

### c. Standard Procedure for Firing

(1) On marches the leader will assign at least one man per platoon as an air sentry. If troops are transported by carrier, at least one air sentry per carrier will be assigned.

(2) Twenty-millimeter self-propelled antiaircraft guns will always be ready for combat. Motorized troops must have their antiaircraft machine guns on the trucks and ready for combat. Rifles will always be kept at hand and ammunition will be distributed.

(3) Weapons must be camouflaged. Fire only if a hostile plane is within range of your weapons.

(4) If an air attack is imminent, gunners will not leave the "azimuth-setter" seat; machine gunners will not leave their posts.

(5) Cannoneers and gunners will not be used as air sentries.

(6) Each target must be combatted by weapons of several types. Designate a gun or machine gun to be on the alert so that fire can be opened at a moment's notice. Fire should be concentrated on the target by platoons or by machine-gun squads.

(7) Keep calm. Act cautiously, but quickly, to repulse all attacks. There must be no such thing as "air terror."

#### **d. Rifle Fire against Low-flying Aircraft**

Although attacks by low-flying aircraft have repeatedly caused serious losses, units often fail to take advantage of their opportunities to destroy hostile planes. Lack of any kind of defense merely makes it easier for these aircraft to accomplish their missions.

It has been proved that rifle fire can cause attacking planes heavy losses in men and matériel. Aircraft are very fragile, and may be grounded for a considerable time by hits in the motor, fuel tank, magazine, cable, and so on. You accomplish an important defensive purpose, then, when you prevent a pilot from directing his fire properly or when you damage his plane.

Hostile pursuit bombers frequently approach at a low level and start to gain altitude only just before they attack. When they do this, they cannot be picked up by our air-raid warning sentries early enough to permit our own fighters to arrive in time. Under these circumstances, the fire of rifles and other weapons not otherwise employed in the ground fight must be concentrated against the attacking aircraft.

It is best to open with a salvo, and to follow this with rapid rifle fire. The object is to greet the attacker with a cone of flying steel.

Rifle fire directed against aircraft flying at an altitude of more than 600 yards is ineffective, and serves only to give away one's own position.

No aircraft is invulnerable. Therefore, in line with the classic principle that attack is the best defense, every German soldier must be indoctrinated with the determination to shoot the attacker out of the sky.

## **Section V. STREET FIGHTING BY PANZER GRENAIDIERS**

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German Panzer Grenadiers (armored infantry) are given extensive training in street fighting. Cooperating with tank units, the Panzer Grenadiers are often employed for the close-in combat that is required when the Germans wish to put an end to all resistance within a town—generally one which has been, or is being, encircled. The following extracts are from a Panzer Grenadier lieutenant's account of such an action. In spite of its Nazi point of view and its heightened style, it is interesting as an illustration of Panzer Grenadier activity. The action the lieutenant describes takes place on the Eastern Front. A well-deployed tank battalion, followed by a Panzer Grenadier company riding in armored personnel carriers, is advancing across the plains of the Ukraine.

A Russian force has been encircled, and the task for today is to drive through the center of the pocket and divide the Russians into still smaller groups, which can be destroyed separately. As yet, no rounds have been fired, but the tanks ahead of us may come upon the hostile force at any moment. The company commander glances at his platoons; they are following in considerable depth and width. The distance between vehicles is at least 50 feet, the radios are set for reception, and everything is in order. It is very hot, and there is a haze.

The men in the tanks ahead can see a village in the distance. According to the map, this should be Krutojarka. Guns can be seen flashing at the edge of the village. The Russian force is engaged. We hear the fire of Russian antitank guns and our own tank cannon, and, in between, the sound of both sides' machine-gun fire. The Panzer Grenadier company commander gives his command by radio. As soon as the grenadiers see Russian soldiers, they are to fire on them directly from the personnel carriers, or else dismount quickly and fight on the ground, depending on the requirements of the moment.

The first tanks enter Krutojarka, but presently reappear. The company commander gives the radio command. "Krutojarka is being held by the enemy. Clear the town!" The personnel carriers advance past the tanks, which are firing with all their guns, and move toward the edge of the village.

A personnel carrier's tread is hit by a flanking antitank gun. The grenadiers jump out and assault the antitank-gun crew with machine-gun fire, while the driver and the man beside him get out and, under fire, change the broken link of the tread.

The attacking grenadiers have now reached a street at the edge of the village. Startled by the suddenness of the assault, the Russians take cover in houses, bunkers, foxholes, and other hideouts. The grenadiers jump out of the personnel carriers and advance along the street, making good use of grenades, pistols, and bayonets [see cover illustration]. The driver and a second man remain in each carrier.

The personnel carriers skirt around the sides of the village, with the men beside the drivers delivering flanking fire against the buildings. Soon the roofs of the houses are afire. The smoke grows thicker and thicker.

Three tanks push forward along the main street of the village, to support the attack of the grenadiers. We find the smoke an advantage, for it prevents the Russians from discovering that there are relatively few of us. Also, as a result of the poor visibility, the Russians cannot employ their numerous machine

guns with full effect. We, for our part, are able to engage in the close-in fighting at which we excel. It is no longer possible to have one command for the company. Officers and noncoms have formed small shock detachments, which advance from street corner to street corner, and from bunker to ditch, eliminating one Russian nest after another.

A lieutenant holds a grenade until it almost explodes in his hands, and then throws it into a bunker. It explodes in the firing hatch, and enemy soldiers stream out.

The company commander discovers a 37-mm Russian antiaircraft machine gun, and sits down on the saddle. Two men who are with him attack the magazines, which are lying about. Although the commander has never fired this type of cannon before, he succeeds in demoralizing the Russians with its high-explosive projectiles. We take many more prisoners.

When about half the village is in our hands, and when we have captured the Russian commander and his political commissar,<sup>1</sup> resistance collapses. All prisoners are marched to the rear, and the booty of guns and vehicles is collected. The Panzer Grenadiers advance to the far end of the village, where they climb into the waiting personnel carriers. Most of the tank battalion also has skirted the village, and already has moved further east. Anticipating further action, the Panzer Grenadiers again follow the tanks.

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<sup>1</sup> Since this account was written, the Russians have discontinued their practice of assigning political commissars to accompany Red Army units.

## **Section VI. THE GERMANS IN COMBAT— AS SEEN BY THE BRITISH**

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In a series of informal discussions, a number of British officers and enlisted men who fought the Germans in Tunisia have made useful comments on German combat methods—and on certain British procedures, as well. Some of these soldiers were experienced, but many had just seen action for the first time. The following extracts from their remarks will be of special interest to U. S. soldiers who have not yet faced the Germans in battle.

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### *Adjutant, Parachute Battalion:*

The Germans have a habit of shifting their positions daily. We were badly "had" because of this. Sometimes we had to carry 3-inch mortars 10 miles across country, and then, when we shelled a place where the Germans were supposed to be, we found that they had moved. As a result, we merely gave away our own position . . . .

The Germans didn't seem to do much night patrolling. At first, we had very little difficulty in taking them by surprise. One of our parachutists got up to a farmhouse where there were a lot of Jerries. He planted a bomb in a room where they were sleeping, and got out without waking anyone. A Jerry stopped him in the passage outside and said, "What are you doing here?" Our man stuck a gun in the Jerry's ribs and explained the situ-

ation. Our parachute blouse is very much like the German uniform, and this German wouldn't believe it wasn't all a joke—until he was shot.

By the way, here's a point I'd like to stress: if you're going up a hill where Germans have been, look out for mines set with pull-igniters. The Germans plaster the place with them.

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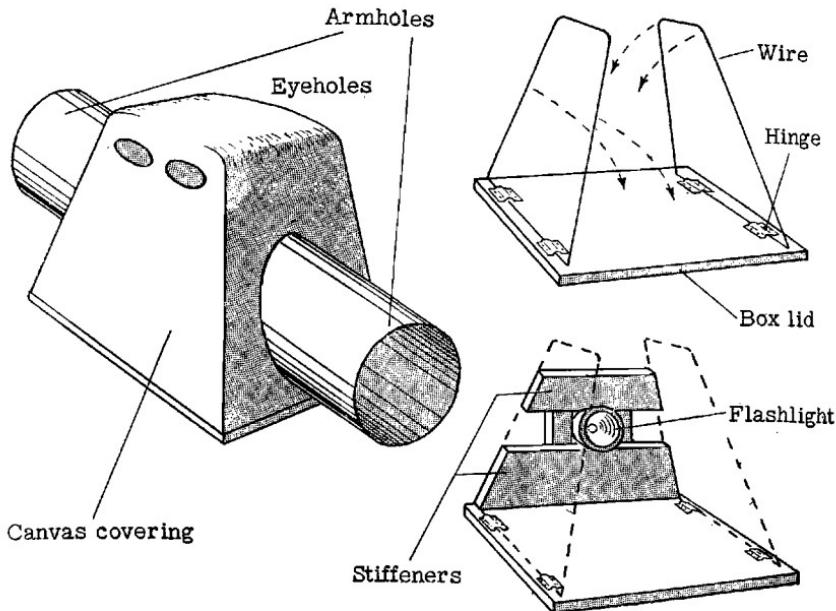
*Lieutenant, Field Co., Royal Engineers:*

Our job was mainly lifting and laying mines, building battalion positions, and marking roads with white stones and so on, to make night driving easier. What a lot of people don't realize is that under these conditions all headlights are forbidden and that all movement must be done at night. Thanks largely to all the road marking, the accident rate wasn't bad.

We also spent a lot of time checking against maps. By the way, we soon found out that the thickness of a road line on the map doesn't necessarily have any relation to the width or quality of the actual road itself.

In the future one thing I'm going to concentrate on like hell is night training. Most work in connection with mines and bridges is done at night. We found it absolutely necessary, when close to the enemy, to have some means of looking at maps without showing a light. In an attempt to solve this problem, we devised a portable case (see fig. 4). It's very simple—just a "compo" ration-box lid, with a wire framework supporting a little canvas tent affair, which has two eyeholes and two armholes. A flashlight is clamped into a wooden cross-bar support at the back. We found the whole thing extremely practical . . . .

Trip wires leading to mines are a hell of a problem. The Germans like to place them in underbrush. During a march, your legs and feet get less and less sensitive to what they brush against, and if you aren't alert you're likely to crash into a trip wire and detonate a mine—very likely an "S" mine set with a pull-igniter.



**Figure 4.—Portable Device for Map Reading at Night.**

*Battery Commander, Royal Artillery:*

Gunners should give more thought to the question of defending themselves. Ninety percent of the time, gunners are without infantry protection, whether in battle or on the road. This point becomes very significant when you are continually threatened by German patrols at night. Gunners have a great tendency to attract the Germans' attention by talking. The Germans creep up, sling a few grenades, and get away. My men weren't guilty of this, but I know of a number in other batteries who were.

German shelling soon taught us the necessity for improving our gun-pit digging.

*Company Commander, Hampshire Regiment:*

It's difficult to know what to do when the Germans give themselves up during an attack. You'd sometimes find that half a group would go on firing, while half were making signs of surrender.

You've got to watch out that the ones who raise their hands to surrender don't pick up their rifles and fire at your back when you've gone past them.

The Germans move about more than we do. We seem to be rather static-minded. The Germans will occupy a position and then leave it for an entire day and night, but this doesn't necessarily mean that they don't intend to come back . . . .

### *Private, Parachute Battalion:*

There were two small woods, one behind the other, about a mile in front of our lines. The nearer one was reported clear, but the other was supposed to be used by a German platoon coming up to patrol at night. Our platoon was sent out as a combat patrol.

We went by the route marked on the map (see fig. 5). The ground was covered with low bushes, so we couldn't help making a certain amount of noise. Even so, we were able to come quite close to two German sentries, whom we found in the first woods—

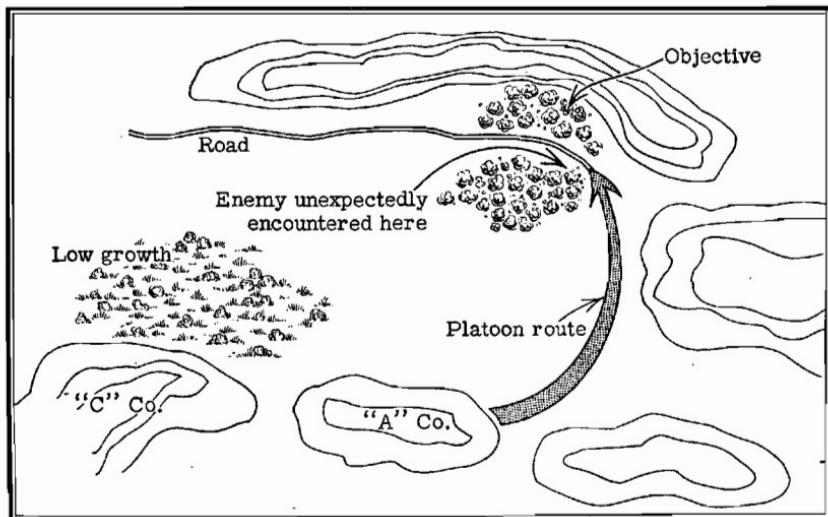


Figure 5.

to our great surprise. We got down and listened. We could hear the sentries walking about and talking. They were pretty careless. One kept blowing his nose. I should say that they were just the other side of the hedge, within about 15 yards of us.

If they had been more wide-awake, they would have had us cold. The mere fact that they were there at all was unpleasant enough for us. We weren't expecting to meet them until we got to the second wood, but here they were in the first. Then we heard another bunch on the other flank, making enough noise to indicate much greater strength than our platoon could profitably attack. So we retired.

One thing this experience taught me is that you can't always rely on information brought in by a patrol the night before.

#### *Gunner, Royal Artillery:*

I used to laugh at slit trenches, but at a particular place one saved my life. We had dug a good deep slit trench beside our gun. It was just getting dark, and we had fired the last round of the day, when two Ju 88's spotted us. The battery executive yelled, "Get into the slit trenches." Most of us were fortunate and got in quickly. The others, I'm sorry to say, were either killed or wounded. So the narrower and deeper the slit trench, the better.

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#### *Private, Parachute Battalion:*

The Germans knew approximately where we were, but they didn't know our exact position. There were a lot of dead bodies lying about, and some of the boys started looking for loot—revolvers, binoculars, and so on. The Germans got our exact position, of course, and gave us hell with mortars, killing nearly every man. So here's a piece of advice: leave the loot alone, and don't move about where the Germans can see you—they're sure to give you hell if you do.

*Private, Infantry Battalion:*

We were to start the big attack on the main Tunis road at early morning on 22 April, but the Germans attacked us at dawn on the 21st. We were in a wadi, when we were surprised by about 30 Germans. They were very good soldiers, too. How they got around our forward company, which was A Company, nobody knows. But this put them right between A Company forward and battalion headquarters, which was in the wadi with all our tracked vehicles.

The enemy was occupying our observation post, which was about 900 yards from battalion headquarters. Our C. O. sent C Company into the attack, but they couldn't move the Germans, who were holding a forward slope. So the C. O. had the mortar platoon lay a smoke screen while C Company withdrew. However, he also placed his light machine guns out and sent in B and D companies, with bayonets fixed. I had read about the Jerries not liking the sight of cold steel, and it turned out to be true—they were putting up their hands before our company was within 50 yards of them. It was a grand sight to see our men going in with the charge, which I saw from the wadi, as I was with the Antitank back at headquarters.

Then the second-in-command sent down for four drivers to bring in four trucks left behind by the Germans. We went over the top of the hill, from which the Jerries had been moved, and we could see the trucks about 400 yards away. When we were within 10 yards of them, an enemy machine gun and snipers suddenly opened up. They got my chum. Seeing no cover, I dropped down in the tall grass. Probably because I remembered what I had been taught about crawling, I'm here to tell the story.

## **Section VII. MISCELLANEOUS**

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### **1. TACTICAL EMPLOYMENT OF AT WEAPONS**

Toward the end of the Tunisian campaign, Major General Weber, who was in command of the 334th German Infantry Division, issued this extremely interesting order regarding the tactical employment of antitank weapons.

The opposition uses its tanks as assault guns, with the help of which it pushes its infantry forward. In general practice, the opposition does not attempt to make a breakthrough with armored vehicles, but tries to nibble forward, on a broad front, through the main defensive positions. Hostile tanks must therefore be knocked out during the initial penetration, so that the hostile infantry will lose its artillery support. To this end, all antitank weapons—such as antitank guns, antiaircraft guns, and tank guns—are to be placed under the command of the infantry sector commanders, who will site them well forward in the fire plan. In addition, all antitank weapons are to be made into strong points, to permit all-around defense against both tanks and infantry. As these strong points, cleverly sited so as to give flanking fire support, begin to knock out tanks and armored cars, the whole attack will gradually be brought to a standstill.

### **2. "ENGLISH SPOKEN HERE"**

German field patrols often call out familiar Christian names in English, hoping to locate Allied positions.

(This has also been a favorite ruse of the Japanese.) German tanks sometimes stop and open their hatches, whereupon a German soldier says in English, "It's all up—no use fighting—get up and come forward," or similar phrases. This, again, is a trick by which the Germans hope to locate positions. If, in such instances, U. S. soldiers suspect a ruse and keep well down, they are likely to be rewarded by hearing the Germans close the tank hatch and move along to try the same stunt elsewhere.

### **3. SMOKE GENERATORS ON TANKS**

The Germans are using a new type of smoke discharger on the Pz. Kw. 6 and on the latest models of the Pz. Kw. 3.

On each side of the turret, three external dischargers are mounted, one above the other, at a fixed elevation of 45 degrees. However, the dischargers on each side are not in line vertically, but from bottom to top are slightly tilted outward to insure a fanwise projection of the smoke generators and therefore a better smoke screen in front of the vehicle.

Each discharger is a cylindrical tube 3.7 inches in diameter and about 6 inches long. The base of each discharger is closed by a heavy-gauge sheet metal bracket, by which the unit of three dischargers is attached to the turret. The equipment is fired electrically from the interior of the turret.

#### 4. BOOBY TRAPS

Recently the following German booby traps have been reported:

*a.* A Tellermine propped in a tree by means of a long pole. A pull-igniter was screwed into the mine, and wire led from the igniter to a second branch. The idea presumably was that when someone disturbed the pole, the mine would fall and explode in mid-air.

*b.* A 3-kilogram prepared charge, with a pull-igniter attached to the carrying straps in such a way that anyone lifting the charge by the straps would detonate it.

*c.* A small cake of what appeared to be cream-colored soap, with the brand name "Bourgois" on one side and "Made in England" on the other. (When it was placed in a can of water, there was no apparent reaction during the first 24 hours, but on the second day it separated in half, as if a seam had opened. The cake seemed to have some kind of metallic core. When a concussion charge was fired 6 inches from the can, there was a sympathetic detonation of considerable violence, and the bottom of the can was entirely blown out.)

## PART TWO: JAPAN

# Section I. COMBINED ATTU REPORTS ON JAPANESE WARFARE

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### 1. INTRODUCTION

This section has been compiled from various intelligence reports submitted by U. S. observers during the operations on Attu Island. A preliminary report on the Attu operations was published in *Intelligence Bulletin*, Volume I, No. 11. Except for isolated instances, none of the information in the preliminary report is repeated below.

### 2. INDIVIDUAL CHARACTERISTICS

With few exceptions, the individual Japanese soldier on Attu lived up to all our expectations. He was tough, active, tricky, and treacherous, but absolutely no "superman." He was subject to fear, to confusion, and to thoughtless acts of desperation. As a rule, however, he could be counted on to fight to the last.

For example, when about to be forced from a position, the Japanese often would counterattack instead of retreat. Inasmuch as these counterattacks were not well coordinated, they were welcomed by our

troops, who were able to down the enemy in great numbers. The Japanese pressed forward regardless of losses until practically all were exterminated. (Some of them, under great pressure, committed suicide.)

This willingness of the enemy to fight to the death was manifested even in the cleanup period following the battle. In the thick of the fighting, every pile of wounded and dead had to be examined for men feigning death, and awaiting only the opportunity to snipe or throw grenades at some of our men, including hospital personnel seeking to give assistance.

However, in spite of their fanaticism and willingness to fight until killed, Japanese soldiers apparently are still human. Several Attu observers reported that when we had fire superiority, the enemy usually kept their heads down. Their morale was greatly affected by our mortar and artillery fire. The Japanese also showed a fear of our bayonet attacks.

Regarding the characteristics of the individual Japanese soldier, a U. S. platoon leader says:

I feel very definitely that if a continual advance is made on the Jap, he becomes confused and doesn't quite know what to do next. One thing is certain. This business about his being a superman is so much tripe. When you start giving him the real business, he will run like hell and be twice as scared as you are—and when I think how scared I was, that's saying a lot.

### 3. DEFENSIVE POSITIONS

#### a. General

As a rule, the Japanese on Attu organized their defensive positions on high ground which ordinarily (1) afforded plunging fire on the flanks and rear of forces pushing inland from the coast, (2) was extremely to moderately hard to reach, (3) was largely secure from our naval fire and aerial strafing, and (4) was extremely hard to observe from the valley lowlands.

The enemy apparently organized the terrain so that they could obtain the best possible performance from each rifle and automatic weapon. Positions frequently were located high in side gullies. Trenches or tunnels (sometimes both) usually connected foxholes, rifle bays, and automatic-weapon positions, so that a single rifleman or automatic weapon man might have several fields of fire and several positions. These enabled the Japanese to take up a new position when, or before, an occupied position became untenable. Such shifting about tended to deceive our troops with respect to the enemy's strength.

The foxholes, trenches, and bays commanding the flanks and rear of inward-pushing forces were far more numerous than the positions set up for frontal defense. Trenches, of the zigzag type, usually were about 75 yards long, 3 feet wide, and 4 to 5 feet deep.

Broadly speaking, the Japanese did not organize a series of strong points, as we conceive it, but organized the terrain into scattered and frequently isolated

strong points which were very loosely tied together with supporting fires. In selecting these strong points, the enemy apparently paid little attention to routes for withdrawals. This was particularly true in the case of machine-gun positions.

Sometimes holes which, at a distance, appeared to be foxholes turned out to be entrances to large dugouts, living quarters, caches for supplies, or tunnels to observation posts or machine-gun positions. In several instances, trenches covered overhead with timber, dirt, and other forms of camouflage were constructed so as to connect buildings with gun emplacements.

In many cases small prepared positions for riflemen and machine gunners were found near large rocks, under the walls of cliffs, and in other naturally protected areas.

### **b. Machine Guns**

As a rule, the Japanese emplacement of machine guns was good with respect to mutual support. The guns were seldom placed alone. Each was supported by at least one other gun, generally located from 200 to 500 yards away. This made their reduction more difficult as all the weapons had to be taken at once—otherwise, the first gun position taken would receive prompt support from other positions. In at least one instance, this support was strengthened by the addition of a rapid-fire cannon, which twice forced our troops to withdraw under fire after they had taken a machine-gun position. Also, grenade dischargers were frequently located near machine guns.

Often machine-gun positions were constructed either of blocks of tundra—which offered good concealment but poor protection—or of small and medium-sized rocks piled upon each other. Such positions along the rocky ridge tops afforded good camouflage but, once discovered, were deadly to the occupants because of rock fragments. Several Japanese bodies in these positions showed evidence that flying pieces of rock had caused deaths.

#### **c. Sniper and Observation Posts**

Sniper and observation posts were well located with respect to the terrain. They had no paths leading to them, and were well camouflaged with grass and, in some instances, turf and moss. A few of these posts had a T-shaped stick, about 3 feet high, which apparently was used as a rest for field glasses. The Japanese sniper or sentry apparently approached his post from a different direction each time he reported. Relief parties did not come close to the post.

### **4. DEFENSIVE TACTICS**

#### **a. General**

By siting their weapons on high ground, the Japanese secured maximum fields of fire and excellent opportunities for long-range fire. They utilized both advantages. Most of their fire came at us from ranges of 1,000 yards or more. Some of the enemy's heavy machine guns were equipped with telescopic sights for long ranges, up to 2,500 yards.

This long-distance fire, delivered from high, well-concealed positions, was plunging steeply when it reached our troops, and frequently pinned them down. Except for its harassing value, this fire was not considered effective. The enemy's rifles and machine guns had no grazing fire at such long ranges, and the cones of fire were too dispersed to be effective against individuals. Also, the opening of fire at such long ranges gave our forces a pretty good idea as to the location of the Japanese positions.

### **b. Machine Guns**

In addition to siting their machine guns well, the Japanese also had prepared elaborate range cards for firing. Apparently many of the guns had been registered carefully on terrain features before our troops went ashore, and had been laid on specific ground areas with planned patterns of mutually supporting cross fire. In many cases the enemy guns on ridges were set to search out every hollow in certain valley areas. Small range and deflection stakes were often found in front of enemy positions. This arrangement permitted the Japanese to open well-aimed fire, regardless of visibility.

As our troops advanced close to the Japanese positions, the hostile fire frequently was high—probably because many of the enemy gunners forgot to change their sights.

**c. Use of Bayonets**

Despite the fact that the Japanese place considerable emphasis on the use of cold steel in training, on Attu the enemy gave a poor performance with the bayonet, as a rule. Some observers believed the enemy may have feared our generally larger stature and, presumably, greater physical strength.

**d. Communication**

The Japanese placed great emphasis on the disruption of our communication facilities. Our soldiers could traverse wide areas known to be infested by enemy snipers, without being fired upon. However, when a soldier stopped for the apparent purpose of repairing telephone wire, snipers' bullets would begin to whine all around him. In the final all-out enemy attack, bayonets severed our wires in certain areas at an average interval of 20 feet, and rearward communications were disrupted. In some cases, enemy bayonets scratched the insulation off our wires in order to ground the circuits.

**5. CAMOUFLAGE****a. General**

Japanese camouflage on Attu was excellent. The enemy relied mainly on natural material, such as grass, moss, and limbs of dwarf pussy willow trees. Other materials included the usual camouflage nets for the body and head, camouflage capes, strips of rice-straw matting and grass matting, rope matting, dummy men and guns, and white snow parkas (some observers re-

ported that white wrap-around snow pants also were used).

### **b. Natural Material**

Individual hillside positions for Japanese soldiers were usually shielded by pussy willow branches. These were draped with moss and tufts of grass which almost completely hid the opening.

Tuft s of grass were used to mask the narrow slits (for observation and firing) of covered positions. The outlines and shadows of these positions were broken up by tufts of grass which were loosely twisted into ropes. Sometimes rice straw was used in making the ropes. Straw matting also was used, to cover openings or excavations.

All of these types of camouflage were generally used on one-man structures, while the principles of limiting shadows and of reducing silhouette elevation to a minimum were also generally well utilized.

### **c. Rope**

Rope  $\frac{1}{2}$  inch in diameter was found in large quantities. In utilizing it for camouflage, the Japanese opened the rope strands—as in splicing—placed tufts of compressed grass between the strands, fluffed them out, and then twisted the strands of rope back into place. The tufts of grass were 15 to 18 inches long and 1 inch in diameter.

After camouflaging a rope in the above manner, the Japanese coiled it up, or put it into immediate use by tossing a coil over the object to be camouflaged. This

and other coils were then crisscrossed and secured until the camouflage operation had been completed.

#### **d. Wearing Apparel**

The individual camouflage nets were made of vari-colored netting. Wisps of similarly dyed raffia (strong fibrous strands from the leaf stalks of raffia palm trees) were tied into the string meshes of each section.

Individual nets frequently were laced together to cover conical tents. In many instances high revetments were built around the tents, and the camouflage nets fell at a gentle angle from the peak of the tent to the revetment wall. The practice of locating tents at the bottom of deep and almost inaccessible ravines provided an additional safeguard.

The white snow parkas were used for wearing above the snow line. Where possible, the enemy avoided travel across snow patches during the day unless clad in white clothing. When the enemy soldiers moved across the pale grass of the hillsides they often moved in a crouching position with strips of grass matting held in front of them.

Individual enemy riflemen and observers were supplied with hooded camouflage capes, which were made of light, rain-repellant tan paper. The capes were about 9 by 6 feet, and were tied with tie strings. Behind and under these capes, riflemen and observers could sit for a day at a time, dry and protected from wind and rain and indistinguishable from the tundra.

**e. Installations**

As a rule, the Japanese constructed cooking and storage chambers, latrines, and bath houses by cutting into the sides of hills or banks. They made these structures blend with the surrounding terrain by grass covers, grass or straw, willow branches, and sometimes turf.

Office buildings, barracks, officers' quarters, radio installations, and hospitals in the more developed centers were generally constructed with only the roof extending above ground level (barabara type). The roofs had low peaks, casting only small shadows. The tops of these roofs were covered with sod, which formed a green carpet over each gable. The sod also helped to shed the rain, and gave limited protection from fragments of shells bursting nearby. Glass windows inserted near the gables as skylights were covered on top with loosely strewn grass to prevent daytime detection, while black-out curtains covered the windows at night.

The Japanese went some distance from the building to dig up sod for covering the roofs. The denuded areas left after the sod was removed were rectangular. It is believed that the enemy prepared the areas in this manner with the belief that the contrasting color would befuddle our air observers.

Similar deceptive techniques were used in outlining entire trench systems, where only the surface sod was removed to reveal the dark earth.

Foxholes and machine-gun nests dug in snow-covered ground were covered with white cloths which blended perfectly with the snow.

Frequently small mounds of dirt were built in front of foxholes and covered with tundra. This made it impossible to see the foxholes from a lower elevation.

#### **f. Dummy Emplacements**

Islands at the entrance to Chicagof harbor contained complete dummy emplacements, including wooden guns and straw men (made by stuffing salvage uniforms with dry grass).

### **6. DEVELOPMENTS IN WEAPONS**

Several Japanese "barrage" mortars, a comparatively new weapon, were captured on Attu. The mortar previously had been reported in the South Pacific theater. It was also noted on Attu that the enemy has made slight changes in hand grenades and the Model 89 grenade discharger.

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**a. "Barrage" Mortar**

(1) *Description.*—The "barrage" mortar (see fig. 6) is a simply designed weapon for area bombardment. It consists of a smooth-bore tube, approximately 70-mm in diameter and 4 feet long; a base plate, a rectangular wooden block, and an iron rod, which holds the mortar in an upright position and controls the angle of elevation for firing. The wooden block, 12 inches long, 10 inches wide, and 8 inches thick, is used to absorb the shock during firing and to prevent the base plate from digging into the ground. The base plate is fastened to the block by two bolts. The iron rod, about 1 inch in diameter and 18 inches long, is fastened to the bottom of the block and extends straight down.

The elevation or depression of the mortar is determined solely by the angle at which the rod is stuck into the ground. The weapon apparently has no range-control device.

The tube of the mortar screws onto the base plate, which has a threaded male fitting. The firing pin protrudes upward from the center of this base fitting.

The shell used in the mortar has an over-all length of  $10\frac{3}{4}$  inches and a diameter of  $2\frac{3}{4}$  inches (see fig. 7). It is made of steel, is cylindrical in shape, and is painted

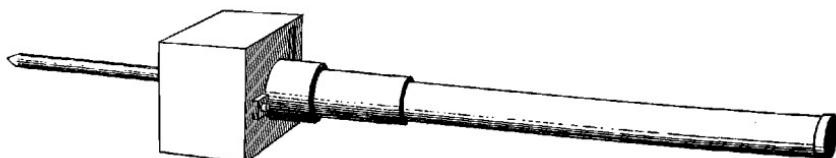


Figure 6.—Japanese "Barrage" Mortar.

black. The nose of the shell is capped by a rounded wooden disk on a metal base, and is secured to the casing by six rivets. A red band is painted around the shell just below a wooden cap.

The shell is divided into three main sections, namely:

(a) Base section, which houses a central percussion cap and explosive charges (in silk bags) for propelling the shell from the mortar;

(b) Central section, which houses powder delay trains and secondary charges of black powder for expelling seven bomb containers; and

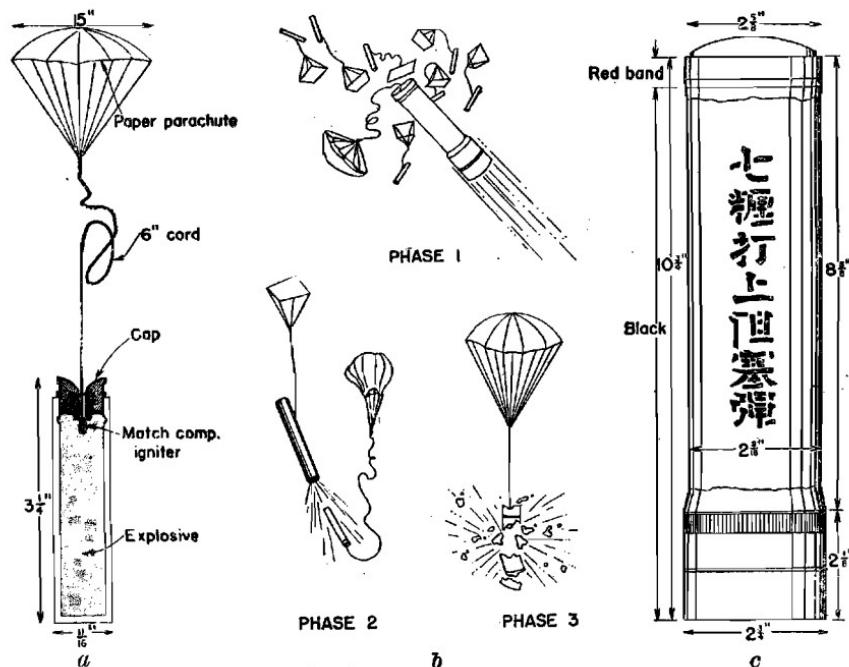


Figure 7.—Shell for Japanese "Barrage" Mortar. (Part *a* shows the details of the bomb; part *b* illustrates the three phases of action which occur in the air after the mortar is fired; and *c* is a view of the shell as a whole.)

(c) Top section, which carries a silk parachute 12 inches in diameter and the seven bomb containers. (The parachute is fastened to a 6-foot-long cord, the other end of which is secured to the inside bottom of the casing.)

Each of the bomb containers, which are made of steel, has a  $4\frac{1}{2}$ -inch square silk parachute fitted neatly into it. Also housed in each container is a steel tube bomb  $3\frac{1}{4}$  inches long and  $1\frac{1}{16}$  inch in diameter. The tube is filled with explosive, and is covered at the open end by a screw cap, which has a hole in its center for the passage of a cord fitted with a phosphorus igniter. The cord is 6 feet long. Its free end is attached to a rice-paper parachute which is 15 inches in diameter.

The seven bombs are marked similar to the mortar shell—they are painted black except for a red band below the screw cap. The bombs also bear the Japanese inscription “Dangerous—don’t touch.”

(2) *Operation.*—When the shell is dropped into the mortar tube, its primer falls against the firing pin and activates the propelling charge. In addition to shooting the shell from the tube, the explosion of the propelling charge also fires a delay powder train.

This delay train burns momentarily until it reaches powder charges, the explosion of which expels, in mid-air, the seven bomb containers and the silk parachute housed in the top section. This parachute apparently is designed to check the speed of the shell and throw it violently off its course, so that the bomb containers, with their small silk parachutes, may be scattered without tangling up.

The explosion of the charges that expel the bomb containers also activates powder delay trains in each of the bomb containers. These burning delay trains then explode expelling charges in the base of each container and force the bombs, each with its rice-paper parachute, from their containers. In the case of each bomb, the jerk caused by the opening of its parachute activates the phosphorus igniter which, in turn, causes the bomb to detonate.

Figure 7b illustrates three phases which are involved in the firing of this mortar shell. Summing up, it will be noted that, after activation of the expelling charges in the bomb containers, there are—at least momentarily—15 different elements air-borne by parachutes, namely: the shell casing, the seven bomb containers, and the seven bombs.

(3) *Purpose.*—The explosive content in the bombs is believed capable of producing a heavy detonation which would shatter the light casing into small fragments—too small to have any antipersonnel effect unless the bombs detonated close to personnel.

The warning inscribed on the bomb suggests that it may also be designed for use as a booby trap. In this case, the blast effect would be highly dangerous.

If necessary to handle an unexploded bomb, the following safety precautions should be observed:

- (a) Do not lift the bomb without lifting the parachute at the same time, or vice versa.
- (b) Unscrew the cap only when the cord is slack.

(c) Dispose of the phosphorus match composition by placing it in water or by burning it after separation from the bomb.

### **b. Hand Grenades**

The hand grenades inspected on Attu have an additional safety feature. The new safety is a small, loosely set screw which fits into the fuze at the top—underneath the cap. To arm the grenades found on Attu, it was necessary to turn the screw about 180°.

Strewn about most of the captured Japanese positions were a number of hand grenades with their pins pulled out. Since the pins have to be withdrawn and the grenade hit sharply on a hard object before it will explode, the enemy may have removed the pins in order to have the weapons in a better state of readiness. Also, the pins may have been removed so that the grenades could serve as booby traps. In this case, the Japanese probably hoped that unwary U. S. soldiers would stumble onto the grenades, and accidentally kick the fuzes with enough force to cause detonation of the weapons.

### **c. Grenade Dischargers**

The Model 89 grenade dischargers examined on Attu had a small bubble leveling device attached to the right side of the breech. The device indicates the angle at which the discharger is held, and thus enables the operator, or operators, to maintain a constant angle of fire.

The projectile used in this grenade penetrates fairly deep into soft ground before the fuze, which has a slight delay element, is activated. This delay considerably restricted the effective bursting area of the shell.

## 7. NOTES ON EQUIPMENT

### a. For the Individual Soldier

(1) *Packs*.—Apparently the Japanese use their standard pack in all climates. It is only slightly larger than the U. S. canvas field bag, and will probably hold only rations, a change of socks, and perhaps a change of underwear. However, the pack is designed so that other articles may be strapped on. Several packs found ready for carrying had a blanket and wool over-coat in separate horseshoe-shape rolls, an extra pair of shoes, a shelter half, poles and pins, and felt leggings. As a whole it was a fairly comfortable pack.

(2) *Shelter Half*.—The Japanese shelter half is a light-weight tarpaulin about  $4\frac{1}{2}$  feet square. It is sometimes pitched like our own, with another to form a pup tent. The halves have no buttons; they are laced together. The pup tent is open at both ends. A segmented, or foldable, pole is supplied with each shelter half. Usually Japanese soldiers simply cover themselves in a foxhole with their own shelter half.

(3) *Cartridge Pouch*.—The Japanese cartridge pouch is made of laminated duck, which has been thoroughly impregnated with rubber to give it a certain amount of rigidity and yet allow for resilience. The arrangement used to effect a snap closure is simply a buttonhole over

a collar-button type steel fastener. The pouch has a partition in the inside to allow for separation of ammunition clips. Loops permit the pouch to hang from the waist belt.

(4) *Entrenching Shovel*.—The Japanese entrenching shovel has a sturdier handle and a more pointed blade than ours, and it was better for cutting the matted grass roots in the Attu tundra.

(5) *Skis*.—These were called “Glacier skis.” They were short and broad, with about two-thirds of the length extending in front of the toes. This permitted excellent maneuverability and provided ample flotation on the granular-type snow found in the Western Aleutians.

(6) *First-Aid Packet*.—All Japanese soldiers are taught first aid, and all carry a first-aid packet somewhat similar to the U. S. packet. The enemy has a powder which is designed to serve about the same purposes as our sulfa drugs, and another powder, which the soldier takes internally when wounded.

### **b. Wearing Apparel**

(1) *Headgear*.—Enemy troops on Attu were equipped with a steel helmet, which was painted olive drab and bore the Japanese Army star insignia in the front center. The helmet, somewhat smaller than ours, apparently was made of unalloyed, or poorly alloyed, steel, and it was not as tough or as resistant to shock as the U. S. helmet.

The typical peaked Japanese field cap was found in large quantities. Also found were large numbers of a winter cap, which had ear flaps, and a fold-down section to cover the head, helmet-wise, and also the lower part of the face. The cap was lined with real fur or manufactured fleece.

Also found were grayish purple knitted helmets, made of wool and silk, which could be worn under the steel helmet.

(2) *Uniforms.*—Japanese officers wore clothing scarcely different from that of the enlisted man. The material for officers' uniforms was superior in some cases, but the tailoring was the same.

## **Section II. NOTES ON THE JAPANESE— FROM THEIR DOCUMENTS**

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### **1. INTRODUCTION**

The information in this section has been paraphrased from translations of a variety of unrelated Japanese documents. These have been edited to eliminate repetition and passages of doubtful value. The reader must keep in mind throughout this section that the information comes from enemy sources, and that it must not be confused with U. S. methods of warfare.

### **2. THE DOCUMENTS**

#### **a. General Comments**

This is war, and casualties are unavoidable. Our soldiers must not let themselves be stunned into a passive state of mind by the sight of casualties; each man must resolutely continue with his appointed duty.

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During the course of battle, no commander will retreat except upon orders of a higher command. No unit will take action on its own initiative. No commander will oppose the plans of his superior, or lower the morale of his unit. Casualties result from misunderstanding one's mission, or failure to give proper orders. Further casualties result because lower commanders often lack self-confidence, or desire notoriety. [Editor's note: According to some earlier notes on Japanese training, considerable emphasis

was placed on the initiative and daring of small-unit leaders. Perhaps some of the latter have overstressed the point.]

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If the enemy situation is completely unknown, we will not make a frontal assault.

Hand-to-hand combat during daylight hours is not advisable. It is not profitable to be foolhardy, because modern war involves tremendous fire power, with automatic guns.

### b. Reconnaissance

Items which you [Japanese] will note while reconnoitering in the jungle include the following:

- (1) The size of the jungle and the nature of the foliage around its edges;
  - (2) The nature of the terrain covering (density of plant growth, types and sizes of trees, and the condition of fallen trees);
  - (3) The nature of defiladed positions and the degree of defilade;
  - (4) The nature and condition of the terrain as a whole, including streams, marshes, cliffs, and other ground obstacles;
  - (5) The deviations on the compass, if any, and the accuracy of available maps or other reference material;
  - (6) The communication installations, if any; the condition of any inhabited areas; and any problems in connection with water supply;
  - (7) The degree of infestation by mosquitoes, flies, and other harmful or nuisance insects;
  - (8) Whether or not the area is occupied by enemy [United Nations] security detachments, positions, or defense installations; and
  - (9) Suitable routes for the advance of all columns.
- 

During the advance in jungle areas, make a complete reconnaissance of the enemy situation. In addition to sending out

patrols, each unit will select competent personnel (those with excellent eyesight, such as fishermen and the natives of Ponape Island) for close-range reconnaissance.

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In the jungle, the individual soldier on reconnaissance should constantly be on the alert for the slightest movement or sound. He should advance only a short distance at a time, making use of the terrain and foliage and crouching as much as possible. When resuming reconnaissance after resting, he should go forward and retreat a number of times. If an individual enemy is discovered, creep up and shoot him. Take particular care to guard your rear.

In the case of a small detachment patrolling in thick jungle, one man must go forward with his rifle ready to protect the others. It is also necessary to keep a sharp watch to the rear.

### c. Advancing in Jungle

Platoons advancing in the jungle will move by squads, or deploy in two lines, or they will move in a diamond formation led by the leading squad. If hostile forces are known to be far away, there are many occasions when the platoon can move in column formation.

If hostile forces are encountered, concentrate maximum fire power on them, and maintain the advance as they retreat.

The interval between squads depends upon the density of the jungle and the nature of the terrain.

In case of a company advancing through the jungle, one platoon will form the front line, or the platoons will advance in waves. Covering fire will be provided. The direction of advance will be indicated by the leading platoons.

In approaching hostile forces, provide adequate covering fire. When closing with the enemy, it is necessary to lay down intense fire from light machine guns, rifles, and grenades. If this

fire is relaxed, not only in the advance held up but the entire tactical situation is jeopardized.

The above precautions are necessary to stamp out the "guerilla" activities of the hostile forces.

#### **d. Assault Tactics**

Consider the following possibilities in connection with launching assaults:

(1) Attract the attention of hostile forces from the front by the use of smoke, by firing, or by shouting; then assault from another direction.

(2) Wait until darkness to assault, particularly if nightfall is only 20 to 30 minutes off.

(3) Make use of rain or fog, and assault when the enemy is off guard.

(4) Assault when the enemy's attention is diverted by our bombing operations.

(5) Assault suddenly over terrain which the enemy believes to be impassable, such as cliffs, rivers, streams, steep inclines, and jungles.

During assaults, be especially careful not to group together at vital points, such as hilltops, villages, and bridges. These are excellent targets for hostile machine guns, artillery, and bombing.

#### **e. Pursuit**

Hostile forces during withdrawals always attempt to destroy installations, such as bridges, power plants, airfields, manufacturing plants, and communication facilities. Prevent this destruction by advancing at an unexpectedly fast pace. It is of vital importance to hurry the opposition during a withdrawal.

Where there are no bridges across nonfordable streams, swim across them. Your clothing and equipment will dry quickly.

Watch out for booby traps while capturing hostile establishments. First, cut electric wires to prevent explosions. Arrange for engineers to remove explosives.

### f. Antitank Tactics

Some antitank weapons and methods of using them are as follows:

(1) *Magnetic mines.*—Attach them to the steel plating of the engine section, or to the turret above the driver's seat, because the armor is relatively thin at those places.

(2) *Molotov cocktail.*—Throw these at the engine section, in the rear of the tank, to set the motor afire.

(3) *Explosive with handle.<sup>1</sup>*—Insert the explosive on top of the ground tread, so that the tread will carry the explosive to the front sprocket. Camouflage yourself thoroughly, and then crouch low as you move quickly to insert the explosive and make your getaway.

Favorable opportunities for attacking tanks at close range include the following:

- (1) When a tank slows down in climbing a slope or passing over obstacles;
- (2) When a tank is separated from other tanks, or from infantry;
- (3) When a tank is passing through covered terrain; and
- (4) At dawn, at dusk, and at night.

### g. Antiaircraft Tactics

As soon as the pilot of a hostile plane sees the flash of the first antiaircraft round, he changes his course. Therefore we should limit each gun to four rounds in the first salvo.

Against fighter planes making diving attacks from several directions, it is effective to fire two types of time-fuze shells with a 1-second difference in the delay element (or more, depending on the situation).

In case a combination of hostile fighters and bombers attack us, we should fire on the fighter planes when they come close. This is particularly important where a bomber [bombers?] is used as a decoy while fighters attack from other directions.

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<sup>1</sup>This weapon is believed to be an ordinary stick with an explosive charge (probably TNT) attached to one end.

## **h. Night Combat**

The hostile forces have a large number of heavy and light machine guns and automatic rifles. Therefore, a careless assault, even at night, will result in great losses. Each front-line unit will deploy into the most advantageous formation and take every advantage of terrain and cover before assaulting. (For further information, refer to paragraphs 216 and 217 of the [Japanese] Infantry Training Manual.)

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Because of the lack of systematic support, our firing power usually fails to achieve much success [in the Southwest Pacific]. In night attacks, prepare for simultaneous firing, even if attacks are not directed at the same objective. Reserve units should be used without hesitation.

## **i. Precautions with Ammunition**

Every effort should be made to keep ammunition dry and cool—not over 90° F. Extreme care is required particularly for shrapnel shells, time and percussion fuzes, and so forth, which contain non-smokeless powder. Valuable opportunities have sometimes been lost because hand grenades failed to explode on account of dampness.

Observe the following points in the handling and use of ammunition:

- (1) Keep it from receiving the direct rays of the sun.
- (2) Stack it so air can circulate throughout.
- (3) Do not place ammunition directly on the ground. First put down wooden rests, so that air can circulate under the ammunition and protect it from the heat of the ground.
- (4) Keep ammunition-loaded vehicles in the shade as much as possible. Improvise awnings made of tree branches to cover the load while in transit.
- (5) Stack in the shade or under awnings the supply of ammunition at gun positions.

(6) Be sure there is space for air to circulate on the top and sides of ammunition dumps which are covered by sheets for protection against rain.

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Ammunition for all guns will be protected against moisture by pasting a paper in the percussion cap (they may be fired without removing the paper).

Separate the smoke bombs filled with yellow phosphorus from the rest of the ammunition, and stack them in a cool place, out of the sun.

If air should come in contact with the yellow phosphorus, it will produce an offensive smell or a white smoke. The shell will explode unless proper steps are taken. Without delay the shell should be immersed in warm water or smothered with sand.

Signaling shells and special shells will explode spontaneously under high temperature, so keep them cool and clean and separated from other ammunition. (This information applies to the "10th-year model" grenade signal flare.)

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In supplying ammunition, make no mistakes as to the fuzes for the different types of bombs and shells. Observe the marks on the fuze boxes or on the fuzes, so you will not confuse the type classifications, such as "Field Cannon," "Howitzer," and so forth. Where the outward appearance of shell cases is identical, or where different types of shells are similar, pay particular attention to the distinguishing markings on the ammunition boxes and the cases so that you will not confuse the types of fuzes for cannon.

When transporting shells, the fuze should be removed from the complete shell, except under the following circumstances:

(1) When a unit transports ammunition loaded in the regulation manner, in the specified boxes and vehicles;

(2) When a special type shell loaded with yellow phosphorus is fitted with a fuze and made completely air-tight;

(3) Where shells were fitted with fuzes when they were manufactured, or were fitted with a base fuze; and under such other circumstances as may be determined from time to time.

### j. 6.5-mm Ball Ammunition

We [Japanese] have two types of 6.5-mm ball ammunition, the standard charge and the reduced charge. The standard charge weighs 2.15 grains and the reduced charge 2 grains. As a means of distinguishing between the two types, the mark @ is stamped on the lower left-hand corner of the top of the box in which the reduced-charge ammunition is packed.

The suitability of these types of ammunition for the various types of 6.5-mm weapons is indicated by the following table:

Type of gun	Model 38 (1905) rifle	Model 38 (1905) carbine	Model 3 (1914) HMG	Model 11 (1922) LMG	Model 96 (1936) LMG
Type of ammunition used.	Standard charge.	Standard charge.	Standard charge.	Reduced charge.	Reduced charge.
	Reduced charge.	Reduced charge.	Reduced charge.	Standard charge when there is no alternative.	

### k. Use of Captured Supplies

When the battle does not progress favorably and supply becomes very difficult, assault and capture enemy supply depots at all costs.

Since the enemy usually burns the supplies he cannot carry during withdrawals, each unit will act quickly to prevent this destruction so we may use the supplies.

## I. Treatment of Prisoners (Singapore)

The handling and direction of prisoners of war at work must be still more strict. Subordinates must be trained to bear down and make the prisoners work hard. We have seen subordinates acting toward prisoners as if the latter were on an equal footing with themselves. These men do not know themselves.

Subordinates must have sufficient self-respect to place themselves on a higher level, and use prisoners as if they were Canton [China] coolies. In giving orders, use bugles, whistles, or Japanese words of command, and make the prisoners move fast. Those who lag will be dealt with rigorously, with measures to make them behave exactly as the Japanese Army wishes.

# **Section III. NOTES BY U. S. OBSERVERS ON JAPANESE WARFARE.**

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## **1. INTRODUCTION**

The information given in this section has been selected from numerous reports by U. S. observers in the Southwest Pacific theater of operations. The observations were made both by enlisted men and officers, some of whom were wounded in combat. The various reports have been paraphrased and edited to eliminate repetition. They are presented according to subject matter.

## **2. PERSONNEL**

We found that the average Japanese soldier [on Guadalcanal] was about 5 feet 3 inches tall and weighed around 120 pounds. A few Japanese were 6-footers.

The morale of Jap prisoners was pretty low; they seemed to be pretty well fed up with the war and rather glad to be captured.

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Japanese aviators seemed quite intelligent and capable; however they did not appear to measure up to our own airmen.

Mentally and physically, the Japanese labor battalions appeared to be far below the regular enemy soldiers. Some of the laborers were 50 years old. All appeared to be virtual slaves of the army. They had to bow every time a Jap soldier passed near them. This attitude existed even when representatives of both groups were prisoners in our camps.

Prisoners from the Japanese Army, Navy, and Air Force were kept in one stockade, and they didn't get along well together. Each group stayed away from the other, and there seemed to be a great deal of jealousy between services, with the navy and air force vying for supremacy.

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### 3. TACTICS

#### a. General

Japanese troops on Guadalcanal usually worked in small groups, and generally two of them tried to gang up on one American, using bayonets if at close range.

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Against us in New Guinea, the Japs never used automatic weapons as such, unless absolutely necessary. They fired only single shots, making it difficult for us to determine the location of their machine guns.

The enemy frequently moved reserves to threatened areas. These movements were made quickly and efficiently, suggesting that they had been rehearsed.

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Inexperienced soldiers [Guadalcanal] had difficulty in distinguishing between the sound of the Japanese caliber .25 (6.5-mm) rifle and that of the U. S. caliber .45 Tommy gun or automatic pistol. However, after a little experience, they discovered that the Jap rifle has a slightly sharper crack.

In the jungle, the noise made by operation of the bolt on the Japanese caliber .25 rifle is usually not heard more than 15 feet away.

We found that the Japs sometimes fired their grenade dischargers and light machine guns from trees.

### b. Defensive Positions

The Japanese on New Guinea have proved to be good defensive fighters. Their positions have been designed so the occupants can kill their attackers—protection has been a secondary consideration. Weapons have been very well sited. Machine guns, well protected by riflemen and snipers, often have been boldly sited well forward in our outer areas, in positions where they could place enfilade fire on our forward elements. Frequently the riflemen and snipers protecting machine guns have been located in trees or open pits on the front, flanks, and rear.

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On Guadalcanal, Jap heavy machine guns were sometimes emplaced in pillboxes constructed of logs and dirt. These gun positions usually were in groups of five, four forming a square with the fifth in the center.

The machine guns fired through narrow lanes, which were close to the ground. It was better to stand up and move fast than to trust to concealment.

### c. Scouting and Patrolling

Japanese scouting patrols [Guadalcanal] varied in number although they usually were small. Frequently they carried no weapons, or else concealed them in their uniforms.

Reconnaissance patrols generally consisted of 5 to 10 men, who usually moved about 5 yards apart. Some of these talked a lot, were not alert, and appeared to be stupid.

One combat patrol we sighted consisted of 25 men, none of whom stood out as a leader. When the patrol sighted us, it split into two groups. Another combat patrol that we encountered was smaller; it retreated immediately.

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The Japanese on our front in New Guinea did not send out combat patrols until they were ready to make a general movement

forward. However, they apparently reconnoitered with small groups to secure information for later attacks.

When the Japs sent out combat patrols, these usually consisted of 30, 60, or 120 men. Their movements were similar to those of Jap units in jungle combat. 

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The use of small patrols purely in a reconnaissance role has often been reported. According to the terrain and their mission, these patrols either remained in one position for observation or reconnoitered while on a march of several days. Such patrols often consisted of three to six privates led by an officer or noncom.

If roads or trails were suitable, the Japanese frequently used bicycles for patrolling.

Because they made less noise, patrols often moved during the rain at night.

#### **d. Use of Bayonets**

In bayonet fighting, the Japanese apparently try to work in pairs. Their bayonets have a hook on the underside, at the hilt. One Jap tries to hook his opponent's rifle long enough for the other to use his bayonet. I never saw these tactics work successfully.

I don't believe that the Japs have had a great deal of training in the technique of using the bayonet. They did very little fencing but attempted direct jabs. They did not use the butt stroke, and were fooled by it in several instances (particularly by the vertical).

One Jap dropped the butt of his rifle to the ground and held the bayonet up at an angle against an oncoming U. S. soldier. 

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The Japanese bayonet was a little longer and a little more pointed than ours, but this did not seem to give the enemy any advantage.

Some officers carried sabers about 4 feet long with a hilt designed for both hands. These sabers were slightly curved.

**e. Use of Grenades**

Japanese fragmentation grenades are supposed to break into fragments when fired, but frequently they only split open, into two pieces, without much dispersion. The dispersal area was never greater than 20 feet.

The Jap grenade does not make a "pop" sound when the fuze ignites. The grenade usually shows smoke about 3 seconds before exploding and makes a hissing sound.

**f. Ruses**

In New Guinea, I noted that the enemy:

(1) Fired ballistic cartridges at night from rear positions to coincide with the Japanese throwing of grenades at close range, in an effort to deceive our troops.

(2) Fired mortars and artillery whenever our mortars opened up, to give the impression that our own mortars and artillery were shelling us.

(3) Prepared dummy posts in fairly obvious positions to draw our attackers into prepared lanes of fire.

**g. Snipers**

I believe that one reason the Japanese ordered their snipers to tie themselves in trees was to get us to waste our ammunition. When a sniper tied in a tree is killed, he does not fall. As other soldiers pass by later, they again spray the body with bullets. I cut down the body of one Jap who had been dead at least three days [Guadalcanal]. I counted 78 bullet holes, 60 percent of which were made by caliber .45 weapons.

---

I saw snipers buried in the ground [Guadalcanal] with slits just sufficient for peek holes and the muzzles of their rifles. These positions were dug to face the rear of our troops after they had passed by.

Many snipers were equipped with light climbing irons, which were made of heavy wire.

### **h. Communications**

Although some of the enemy outposts [Guadalcanal] kept in contact with troops behind them by tapping on wood, whistling like birds, waving their arms, or shouting, the Japanese also used telephones and radios in the forward areas. Outposts and snipers are believed to have communicated with each other by jerking a wire strung between their posts.

The Japanese telephone wire was made of a good grade of copper. Containing only one strand, it was coated with some type of composition, lacquered, and painted yellow. The wire seemed to hold up well under damp conditions.

### **i. Recovering the Dead**

The Japs go to great trouble in recovering their dead. They have been known to crawl to within a few yards of our positions in order to remove a wounded man or even a corpse. The dead are buried or cremated; this makes it difficult to estimate the number killed.

## **Section IV. ENEMY COMBAT NOTES ON USE OF MGs, AT RIFLES**

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### **1. INTRODUCTION**

The notes given below on Japanese combat principles for machine guns and antitank rifles are paraphrased from a translation of an enemy document, which deals principally with the tactical employment of the infantry battalion machine-gun company.

A brief discussion on the organization of the machine-gun company and the battalion antitank section will help the reader to understand the Japanese notes. This organizational data deals only with the model, or "paper," composition of the units. Their actual operational strengths are usually flexible, and generally less than the "paper" figures. The machine-gun company has eight heavy machine guns and six officers and 130 enlisted men. The company is broken down into four gun platoons and an ammunition platoon. The gun platoon has two sections, each of which has one gun and 10 or 11 men. The antitank section consists of two 20-mm antitank rifles, and 17 men.

## 2. THE NOTES

### a. General

Machine guns and the 20-mm antitank rifles operate with the rifle companies to increase their fire power—these weapons are not designed for independent use.

In firing machine guns and the 20-mm rifles, it is important to catch the hostile forces unawares, and to lay down a large volume of fire within a short period.

These weapons must follow closely behind the rifle companies during an advance.

### b. Section Combat

The section leader will inspect the mechanism and the sighting of his gun before going into position so that firing can commence immediately. He will move secretly by cover afforded by the terrain, and by shadows and camouflage.

During combat the section leader will watch the enemy situation and the operation of his own gun. He will observe the range and adjust the gun sights as needed, and, if necessary, will fire the gun himself. At suitable intervals he will report to the platoon commander the amount of ammunition on hand and the condition of the gun.

### c. Platoon Combat

#### (1) Attack.

While front-line rifle units are preparing for the attack, the machine-gun units will move into positions where they can be of the greatest assistance. They will make thorough preparations and maintain close coordination with the rifle companies.

Before sections occupy positions, the platoon commander will, as far as possible, inform the section leaders of the plan of occupation, the firing plan, the range and target, the position of the company as a whole, and the positions selected for the sections. He will maintain liaison with adjacent units within the zone of

advance, and, when necessary, will regulate the details of future firing and advance. The platoon commander will usually order each section to fire at the same general target, but, depending on the tactical situation, he may order them to fire on different targets.

At suitable times during combat, the platoon will change positions. Usually all platoons of the machine-gun company will change at the same time, although, under certain conditions, the change may be made in echelon.

The positions of the 20-mm antitank rifles will be chosen with a view to giving the gunners a good field of fire and as much natural cover and protection as possible.

The antitank-platoon commander will usually point out the tanks at which the gunners will fire, but he also will order the section leader, on his own initiative, to attack targets which appear to be good ones. Against flank defenses, the platoon commander will, as a rule, point out the targets for each section.

Antitank riflemen should not suffer unnecessary losses by firing too quickly and exposing their positions. They should take no notice of diversions caused by the enemy at long ranges, but they will fire against the infantry which usually accompanies hostile tanks. However, if a tank approaches within close range, the riflemen will fire on it at will, or upon orders by the company commander. On such occasions, they are to fire either on the weak spots of the tank or else concentrate their fire on the loophole and the peephole.

## (2) *Defense.*

The machine-gun platoon commander, after having reconnoitered his sector as far as circumstances permit, will see that his guns are sited properly, and will then report to the company commander whether or not there is "dead space" between his sector and friendly troops on the flanks. There must be no weak points in the firing front.

The platoon commander, in order to facilitate the execution of his mission and to avoid needless losses, will set up several alternate gun positions, and, if possible, some dummy positions, as well. All positions must be located far enough back of the front line to prevent their being hit by friendly gunfire from the rear.

Positions will be constructed so that the gunners may stand up while firing. Communication trenches for the purpose of changing positions will be dug so that the men may traverse them by merely stooping.

Each section will prepare a firing plan. In order to simplify firing commands, as far as conditions permit, the section leader will measure the distance to the principal point where fire will be massed, and will set up markers in the forward areas and attach symbols to them. He will prepare a fire map, mark in the principal lines of fire, and will make communication arrangements.

The section leader commences firing upon orders by the company commander. The former will gradually increase his fire against the most profitable targets as the hostile forces press forward. He will lose no opportunity to fire the 20-mm antitank rifles at hostile tanks.

Even if the opposition should penetrate our positions, each section will continue firing in order to facilitate a counterattack. If necessary, the sections will advance, while firing, to more suitable positions. By not considering the question of losses, the machine-gun sections will most effectively cooperate with the unit which is counterattacking.

#### **d. Company Combat**

##### **(1) Attack.**

When an assault by front-line rifle units is held up or hampered, the machine-gun troops, without regard for losses, will direct their greatest fire power against the hostile forces in order to inflict maximum losses and give the rifle units an incentive for resuming the assault.

When preparing positions at night for a dawn attack, the company commander will, as far as the tactical situation permits, reconnoiter the area and decide on suitable objectives. Upon advancing into their attacking positions, the machine-gun units will effect immediate liaison with flanking units, and perform various preparatory duties, which include suitable camouflaging.

After the first-line rifle troops have launched an assault, the supporting machine-gun units must be able to catch up with them rapidly.

## (2) *Defense.*

When ordered to assume the defensive, the machine-gun company commander reconnoiters his area, studies the dispositions of friendly artillery, infantry, heavy weapons, and front-line infantry, and then plans the details of his own attack.

Important points in machine-gun defense include arrangements for digging in, proper disposition of the ammunition platoon, and antiaircraft, antitank, and antigas protection.

In case of a [Japanese] counterattack from defensive positions, the machine-gun company units will advance quickly to new and convenient positions, or, with rifle troops, they may thrust toward the hostile flanks or rear, or through openings. They must attack strongly.

During the retreat, machine-gun troops do not think of losses, but sacrifice themselves for the unit as a whole by firing fiercely against the strong pressure of the enemy. They make it easy for other friendly troops to withdraw. The machine gunners will allow the hostile forces no advantage, and if the latter press close to their guns, the machine gunners will resist with vigorous hand-to-hand fighting and destroy the enemy.

## **Section V. SOUVENIR HUNTERS CAUSE NEEDLESS LOSS OF LIVES**

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Souvenir hunting—a practice which is frowned upon, even in peacetime, by many straight-thinking Americans—continues to cause needless loss of lives and injuries to U. S. soldiers in the various combat areas. Reports from commanding officers and intelligence personnel about the fighting on Attu Island state that souvenir hunters in our ranks interfered greatly with the prompt collection of intelligence data. These reports cite several instances in which lives were actually lost, or the progress of battle impeded, by soldiers who endangered the lives of comrades, as well as their own, by seeking some useless souvenir.

One observer reports that a soldier found a large pair of Japanese binoculars, which were used by the enemy to spot our planes. The soldier hid the much-needed binoculars, with the thought of picking them up for his private use after the fighting was over. Apparently it did not occur to him that the binoculars were badly needed in spotting Japanese snipers and machine gunners who were killing and wounding our men.

Private D\_\_\_\_\_ and his squad grenade a Japanese outpost. As his squad moved forward, Private D\_\_\_\_\_ crammed deep into a pocket of his overcoat a small enemy battle flag and some sketches. They became badly soiled and almost unreadable from tundra mud and foxhole water. Days

later, at a first-aid station, the sketches were taken from the soldier's pocket and examined. They turned out to be new battle orders, which gave definite information about the enemy—in fact, they revealed the location of an artillery piece whose shell had injured Private D-----.

Many of our men apparently removed nameplates from vehicles, picked up optical equipment, and took lots of other items that would greatly have aided intelligence personnel in the combat area.

Where there was no loot of interest to the souvenir hunter, enemy quarters and matériel—useful to us—were sometimes left in utter disorder, and valuable information was destroyed. Our troops ruined food-stuffs and equipment—frequently by slashing through bales and boxes with bayonets—and they burned or damaged tents. In other words, they worked for the Japanese by accomplishing the destruction that the enemy was not given time to complete.

Enemy matériel should be destroyed when the enemy has it, but it should be preserved when it is in our hands. No matter how small or insignificant certain small items of enemy property may appear to you, they may be exactly what is needed to supply the "missing links" to important chains of information.

Remember also that the enemy will frequently booby-trap items he figures you will want as souvenirs.

Both Japan and Germany have often claimed that the efficient operation of their salvage activities has been one of the main factors in successful campaigns of the past. On Attu the Japanese made special efforts to capture our weapons, equipment, food, and cigarettes.

We must seek the enemy's matériel, and keep him from getting ours. A gun captured today may win a battle for us tomorrow. Our technicians must see everything new that is taken from the enemy. They can copy the good points and incorporate them in our own weapons, and they can devise means of countering new enemy weapons.

Remember that:

"Everything has a value in modern warfare."

"Nothing should be wasted or ignored."

"Nothing should be willfully destroyed unless it is in imminent danger of falling into enemy hands."

In connection with the handling or disposal of captured or abandoned property, the 80th Article of War says:

**DEALING IN CAPTURED OR ABANDONED PROPERTY.**—Any person subject to military law who buys, sells, trades, or in any way deals in or disposes of captured or abandoned property, whereby he shall receive or expect any profit, benefit, or advantage to himself or to any other person directly or indirectly connected with himself, or who fails whenever such property comes into his possession or custody or within his control to give notice thereof to the proper authority and to turn over such property to the proper authority without delay, shall, on conviction thereof, be punished by fine or imprisonment, or by such other punishment as a court-martial, military commission, or other military tribunal may adjudge, or by any or all of said penalties.

#### NOTE

In *Intelligence Bulletin* Vol. II, No. 1, page 86, paragraph 11, delete the statement "Water can be freed of salt by filtering it through soil." At the end of the same paragraph, delete the phrase "except for flowing springs."

